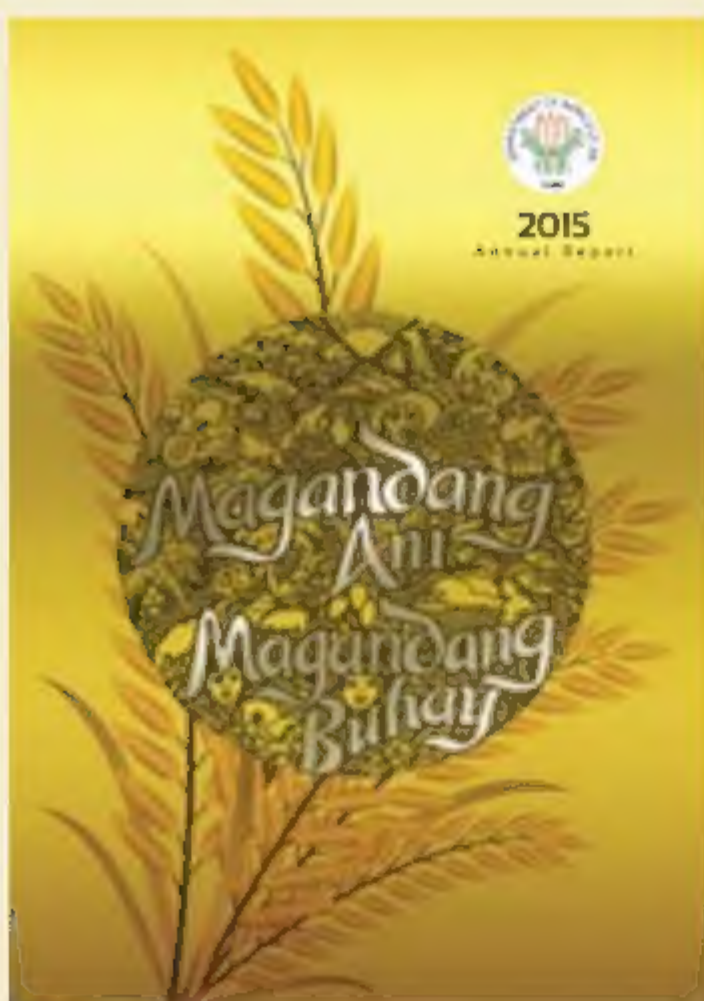




2015

Annual Report





Artwork by Edicio de la Torre

About the Cover

"Magandang Ani! Magandang Buhay!" started as a cheer exchanged as a joyful greeting between Secretary Proceso Alcala and farmers and fishers during meetings in various provinces. The cheer evolved into a nascent movement of small producers who engaged the Department of Agriculture in 2011 – 2016 and are represented by new faces and new voices.

Although they are not the majority in the agriculture sector, the farmers and fishers who relate to the cheer and the emerging movement that it represents are a growing segment. Having participated in programs with their local governments and the Department of Agriculture, they have experienced real benefits due to cooperation. They have transformed themselves from being aggrieved and angry to being farmers and fishers who are achieving and aspiring.

The cover is a fitting handover symbol of the Department of Agriculture intensely linked to progressive and modernizing farmers and fishers crossing over from being traditional producers to becoming active players employing machinery and engaging in various commodity value chains.

May they enjoy not just a good harvest but also a good life as they participate in discovering better ways of producing and experiencing gains beyond the farmgate.



08

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Agriculture
and the National Economy

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Message of the President



My warmest greetings to the **Department of Agriculture** on the publication of your **2015 Annual Report**.

Our farmers are the lifeblood of our country, and it is government's duty to uphold their dignity and rights as vital contributors to national welfare. I am confident the Department of Agriculture is doing its utmost to fulfill its mandate, ensuring that the urgent needs of our farmers are satisfied. Remember that there are those eager to exploit the suffering of our fellowmen, deceiving and manipulating them towards selfish, partisan ends. As public servants, therefore, we must remain motivated to serve our countrymen more vigilantly and fight for their rights. May this report galvanize your resolve to set your sights on higher goals in the years to come.

The Daang Matuwid has helped restore integrity and accountability in our institutions, enabling us to focus our efforts on creating a more equitable society. May your department continue to work on the platforms we have established, drawing new opportunities for advancement and forging the Philippines into a vibrant and dynamic nation.

A handwritten signature in black ink, appearing to read "Benigno S. Aquino III".

BENIGNO S. AQUINO III

Manila
April 2016

Message of the Secretary

Maraming salamat sa mabungang pagtutulungan natin sa nakaraang anim na taon.

Unang-una sa mga magsasaka na nagtiwala at nagbuhos ng puhunan at pagod upang makamit ng ating bansa ang pinakamataas na produksyon ng palay, mais at iba pang mga tanim sa buong kasaysayan. Sa mga mangingisda na nakipagkaisa para mailatag ang batayang proteksyon para masiguro ang suplay ng isda hanggang sa mga susunod pang henerasyon. Gayundin sa mga maghahayupan na tumiyak na pagkaing ligtas at abot-kaya ang ihinain sa hapag ng ating mga kababayan.

Salamat din sa Pangulong Aquino at mga kinatawan sa Kongreso at Senado sa pagsuporta sa sektor ng agrikultura pangunahin ang paglalaan ng badyet upang mapondohan ang ating mga programa.

Sa mga katuwang sa kagawaran, salamat sa pagtanggap at pagganap sa mga gawain natin.

Sa mga partner agencies, local at international, isang malaking pasasalamat sa inyong mga pagtugon sa aming bawat pagluhog ng tulong.

Ang ulat na ito – tinatawag naming Handover Report – ay handog namin sa inyo. Nilalaman nito ang ating sama-samang pinagplanuhan at isinakatuparan. Kabilang dito ang mga kalsada, patubig, makinarya, pagsasanay, mga bagong teknolohiya na ating pinarating sa mga magsasaka, mangingisda at kanilang mga samahan at mga agri-enterprises.



Higit sa lahat, nilalaman nito ang batayan ng sama-sama nating pagkilala sa mga bago at makabagong magsasaka at mangingisda sa ating hanay. Sila yung mga tumawid sa bagong pamamaraan. Hindi na kawawa, api at galit. Bagkus, sila ang mga umaahon, lumilikha at nangangarap. Sila ang nagdadala ng pagbabago sa ating kanayunan.

Sa ating pagsasalin ng kagawaran sa bagong pamunuan, ihain natin ang sektor ng agrikultura nang may isang tinig – ang tinig ng bago at makabagong mga magsasaka na sama-sama ay ating pararamihin pa sa ating sisimulan na bagong yugto. Buong pagtitiwala natin itong gagawin dahil ito ay nakita at napatunayan na natin sa nakaraang anim na taon.

Magandang Ani at Magandang Buhay sa lahat!

PROCESO J. ALCALA
Secretary

Quezon City
June 2016

Mandate

The Department of Agriculture is the government agency responsible for the promotion of agricultural development by providing the policy framework, public investments, and support services needed for domestic and export-oriented business enterprises.

Vision

A modernized smallholder agriculture and fisheries; a diversified rural economy that is dynamic, technologically advanced and internationally competitive. Its transformation is guided by the sound practices of resource sustainability, the principles of social justice, and a strong private sector participation.

Mission

To help and empower the farming and fishing communities and the private sector to produce enough, accessible and affordable food for every Filipino and a decent income for all.

2015 Annual Report

Handing Over

Department of Agriculture
Quezon City, Philippines
June 2016

Top Achievements

Achieved the country's historic best in rice and corn production. From 2012 to 2015, palay production exceeded 18 million metric tons, a level that was sustained even through El Niño which hit the country in 2015. Data from the US Department of Agriculture report Grains: World Market and Trade May 2014 shows that the Philippines was the world's fastest-growing rice producer from 2011 to 2014. Rice sufficiency level rose from 81 percent in 2010 to 97 percent in 2013, a 16-percent increase that missed the national target by 3 percent.* To have a better sense of this achievement, it must be noted that the highest production level achieved in the recent past was 16.82 million metric tons in 2008. In comparison, the highest level for this Administration, attained in 2014, was 18.97 million metric tons—a difference of 2.15 million metric tons or an increase of 12.78 percent.

Meanwhile, corn production consistently exceeded 7 million metric tons from 2012 to 2015, peaking at 7.77 million metric tons in 2014. The highest production achieved before this Administration was 7.03 million metric tons in 2009. Due in part to the promotion of alternative staples, annual per capita white corn consumption increased from 7.07 kg in 2008 – 2009 to 10.26 kg in 2012.

Attained higher farm incomes across commodities. As production increased, farmers' incomes also rose as the result of favorable prices and improved productivity. In particular, per hectare income from palay farming doubled from Php 15,830 in 2010 to Php 31,375 in 2014. Meanwhile, income from corn farming almost tripled from Php 5,760 in 2010 to Php 16,712 in 2014. A similar upward trend was reported in the per hectare income of 16 other commodities.

The improvement in farm incomes did not have an adverse effect on consumers as the movement in food prices was slower in 2011 – 2015 at an average of 4.46 percent per year compared to 5.33 percent in 2001 – 2010.

Reached record level in agri-based exports. Performing better than total exports in 2011 – 2014, agri-based exports increased by 63.81 percent, reducing the agri-based trade deficit from 56.66 percent in 2007 – 2010 to 32.61 percent in 2011 – 2014. (Figures for 2015 are not yet available.)

Improved efficiencies through farm and postharvest mechanization. The Government's distribution of 240 rice combine harvesters fueled greater private sector investment in mechanization. In 2014, the Philippine Center for Postharvest Development and Mechanization reported that 1,566 rice combine harvesters were purchased as the private sector recognized the machine's benefits. Additionally, adjusting the cost-sharing scheme from 50:50 in previous years to 85:15 allowed more farmers to acquire farm machinery with assistance from the Government.

Constructed facilities that allowed direct market access to farmers. Ten Agri-Pinoy Trading Centers were completed while 12 more are under construction or in pre-construction. These trading hubs reduce the need for middlemen and allow farmers to bargain for a better price for their produce, resulting in a 15 – 25 percent increase in income. The inter-trading between hubs stabilizes supply and prices of farm commodities especially vegetables, benefitting consumers through stable supply and better product quality.

Maintained disease-free status of livestock and poultry sectors. The Philippines was declared free from Avian flu, Peste des Petits Ruminants (PPR) and Foot-and-Mouth Disease (FMD) by the World Organisation for Animal Health (OIE). PPR is a highly contagious disease that affects small ruminants such as goats and sheep, while FMD strikes large ruminants like cows and carabaos. The Department of Agriculture maintained this disease-free status in the last five years, registering zero incidence of the diseases.

Improved enforcement of fishery regulations to reverse the declining productivity of the subsector. In April 2015, the European Commission lifted the "yellow card" issued to the Philippines in July 2014, saving the country's Php 9.4-billion annual market for fishery products. The lifting was the result of various legislative and operational initiatives: the issuance of EO No. 154 s. 2013, creating the National Plan of Action against Illegal, Unregulated and Unreported Fishing; the passage of RA 10654 reinforcing the Fisheries Code of 1998; the completion of the Fishers and Municipal Fishing Vessels Registration; and the improved capability to regulate fishing.

Several measures were also undertaken to restore fishery and marine resources, among them the successful annual observance of science-based closed season in major fishing waters and the planting of 78.5 million mangrove propagules. There was also a significant increase in the number of fishery law enforcers from 4 in 2010 to 580 in 2015, all of whom underwent intensive training prior to deployment.

* The calculations are based on FAO's formula: Local Production / (Local Production + Imports – Exports). Using a more common formula of Total Palay Production / Total Palay Requirement = Palay Sufficiency would give 96.29% as the sufficiency level for 2014.

Constructed climate-resilient geotagged farm-to-market roads (FMRs). Of the 6,549 km of FMRs built in 2011 – 2015, about 4,796 km are concrete and climate-resilient. All these FMRs were geotagged to ensure no duplication or overlapping of projects. An inventory of FMRs built and rehabilitated in 2010 – 2015 will be part of the DA's handover documents.

Expanded crop insurance coverage by the Philippine Crop Insurance Corporation. From 150,976 in 2010, the number of farmers with insurance coverage grew to 1,196,144 in 2015. From 2011 – 2015, a total of 368,859 claimants were paid Php 3.09 billion.

Expanded credit coverage of the Agricultural Credit Policy Council. Between 2009 – 2010, 21,440 farmers and fishers were granted Php 425.54 million in loans. This figure grew between 2010 and 2015 to 195,664 recipients of Php 8.60 billion in loans. The expanded credit coverage was made possible through government support in the amount of Php 4.27 billion used as additional loan guarantees. A highlight of the expanded credit coverage is the Sikat Saka Program which enables individual irrigated palay farmers to establish a record of creditworthiness. The program's repayment scheme, with its declining annual interest rate of 15 percent to 9 percent upon regular repayments, encourages borrowers to increase savings. Farmers also have direct access to funds as the loan proceeds are available through their personal Land Bank ATM accounts.

Rolled out the Philippine Rural Development Project (PRDP). The PRDP is the DA's platform for reform and serves as its legacy project for the next administration. Supported by a US\$ 500-million long-term loan from the World Bank, the PRDP embodies the reforms and best practices of the Department since 2010 documented in a detailed Operations Manuals covering investments in public goods and enterprise support.

As part of the PRDP, the Provincial and City Priority Commodity Investment Plans (PCIP) and Commodity Value Chain Analyses (VCA) guide the identification and evaluation of infrastructure and enterprise projects. These studies are not limited to macro data but include information on local players in the value chain, comparative costs, and current market conditions. As of December 2015, the PRDP has approved 194 infrastructure subprojects worth Php 11.8 billion and 98 agri-fishery enterprises worth Php 311.80 million. These subprojects were based on 34 approved VCAs and 69 approved PCIPs.

From treating the rural economy as just a source of problems to recognizing farms and rural enterprises as vital to achieving food security and more equitable economic growth, worthy of re-investment for sustained productivity.

- President Benigno S. Aquino III, A Social Contract with the Filipino People, Item No. 7

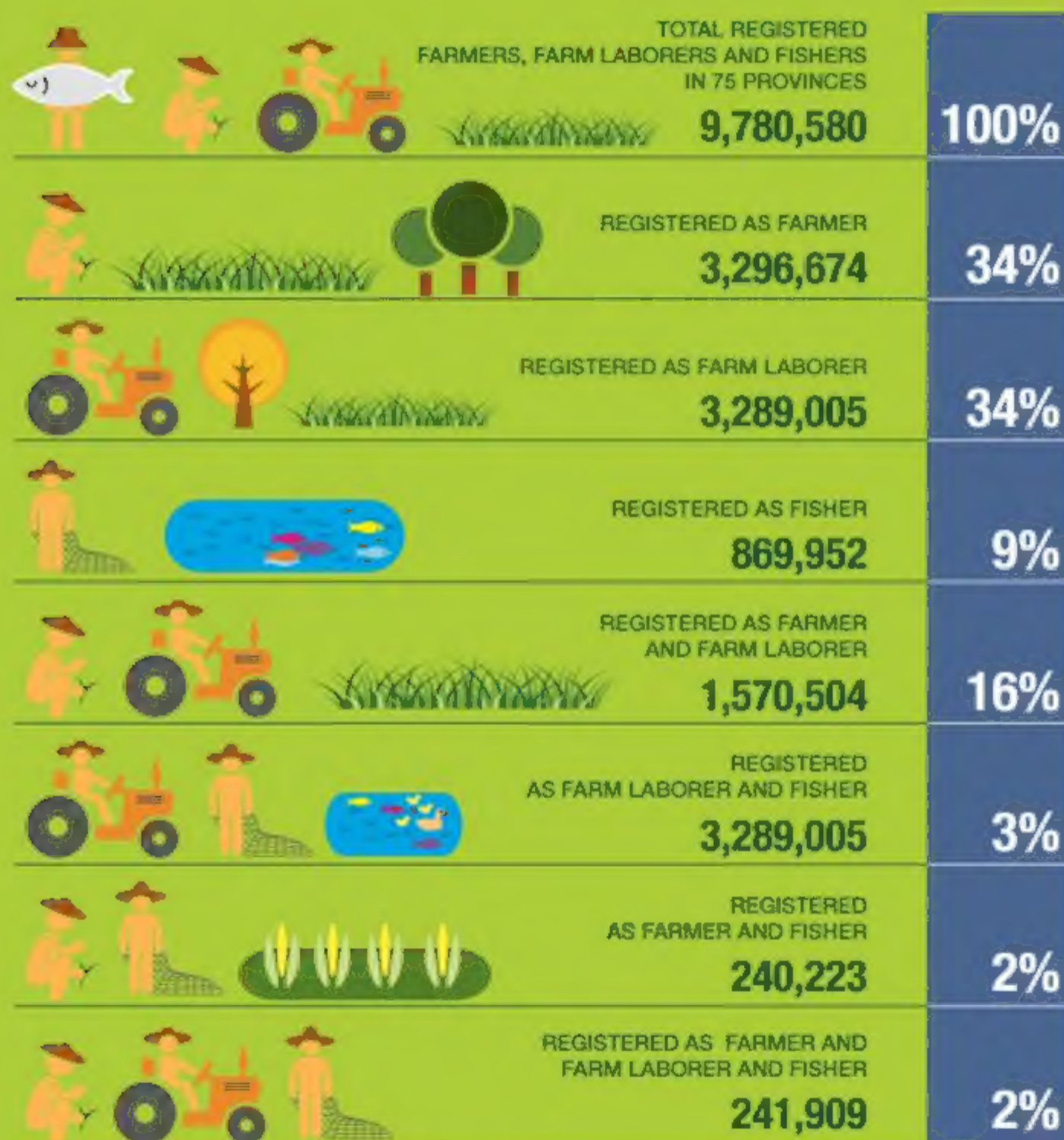


Figure 1. Summary of Registry System for Basic Sectors in Agriculture
 75 provinces as of July 2015

Agriculture and the National Economy

The Philippines has a total land area of about 29.82 million hectares and waters of 0.18 million hectares. Of the land area, 9.67 million hectares are classified as agricultural, consisting of an estimated 4.94 million hectares of arable land of which 3.2 million hectares of irrigable land. At the end of 2014, the number of developed irrigated areas totaled 1.71 million hectares or about 56 percent. As an archipelago, the country also has one of the most extensive coastlines in the world, ranking fourth at 36,289 km.

In 2015, these resources provided employment for some 11.29 million Filipinos involved in the agriculture and fisheries sector. Together they comprised 30 percent of the country's total labor force. At an average family size of five, this means 56 million Filipinos or over half of the population are linked to agriculture.

Such farmers earn their livelihood in a variety of ways, according to data gathered by the Registry System of Basic Sectors in Agriculture (RSBSA), a program that initiated the registration of farmers in 75 provinces in 2012. The RSBSA reveals that of the 9.8 million farmers registered in the system, 72 percent are engaged in diversified commodities (Table 1). One-third are registered as farm laborers while the rest are classified as farmers with landholdings, fishers or a combination of two or three of these categories (Fig. 1). The list will further expand once the data on 3.85 million farmers and fishers submitted by the Department of Agriculture (DA), the National Irrigation Administration (NIA), the Philippine Crop Insurance Corporation (PCIC), the Bureau of Fisheries and Aquatic Resources (BFAR), and the Department of Agrarian Reform (DAR) are crossmatched and included in the registry.

Table 1. Distribution of farmers and fishers by commodity

Commodity Cultivated	No. of Farmers	% Share to Total
 Palay	1,228,138	12.56
 Corn	405,355	4.14
 Coconut	225,695	2.31
 Fisheries	869,952	8.89
 Combination of two or more commodities	7,051,440	72.10
Total	9,780,580	100.00

Source: Registry System for Basic Sectors in Agriculture (as of July 2015)

Performance of the Agriculture and Fisheries Sector 2011 – 2015

The volume of agri-fisheries output (based on value at constant 2000 prices) grew 7.82 percent from 2010 to 2015 with poultry and livestock registering double-digit growths at 20.59 percent and 10 percent, respectively. In the fisheries sector, contraction by 6.82 percent lowered overall performance for the period. However, regeneration strategies implemented in fisheries such as closed seasons for spawning and massive mangrove development have resulted in gains designed for improved incomes and sustained fishery resources for the future. Better prices of agricultural products resulted in a 22.32 percent increase in value of output at current prices from Php 1,256.26 billion in 2010 to Php 1,536.72 billion in 2015. (See Table 2.)

Table 2. Value of agri-fisheries output, 2010 and 2015 (in Php billion)

Sector	Constant 2000 prices				Current Prices			
	2010	2015	% Growth rate	% Share to Total 2015	2010	2015	% Growth rate	% Share to Total 2015
Crops	363.72	398.02	9.43	50.47	673.21	852.16	26.58	55.45
Livestock	120.27	132.38	10.07	16.78	210.47	252.12	19.79	16.41
Poultry	100.96	121.75	20.59	15.44	151.53	194.06	28.07	12.63
Fisheries	146.54	136.55	-6.82	17.31	221.05	238.38	7.84	15.51
Total	731.49	788.70	7.82	100.00	1,256.26	1,536.72	22.32	100.00

Source: Philippine Statistics Authority (PSA)

High growth recorded in all subsectors except fisheries due to overfished and overbuilt areas requiring regeneration.



Sustained growth of Gross Value Added (GVA) in Agriculture, Fishery and Forestry (AFF).¹ The increase in volume of agri-fisheries output resulted in continuous growth of GVA in AFF from 2011 to 2015 despite calamities that struck the country. Growth slowed in 2013 after Typhoon Yolanda hit regions in the Central Philippines barely a month after Typhoon Santi wrought damage to Central Luzon farms and in 2015 as the country experienced the effects of El Niño. Nevertheless, from 2010 to 2015, GVA in AFF at constant prices grew 8.29 percent, at an average 1.66 percent annually.² Meanwhile, GVA in AFF at current prices—which captures price movements—grew at an average annual rate of 4.40 percent. (See Fig. 2.)

Figure 2. GVA in AFF at constant and current prices 2009-2015 (in Php billion)

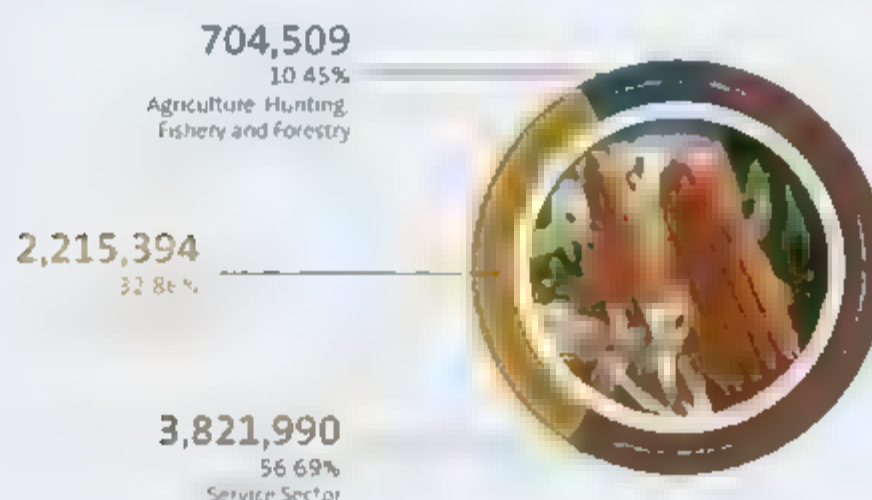


Source: PSA

Contribution to output and employment. The AFF sector contributed an average of 10.45 percent to the GDP in the last five years (see Fig. 3). Driven mainly by the services sector, the economy continued to grow, but the share of agriculture dropped from 11.58 percent in 2010 to 9.43 percent in 2015. In terms of employment, the agri-fisheries sector employed an annual average of 31 percent of the country's labor force from 2011 to 2015 (see Fig. 4).

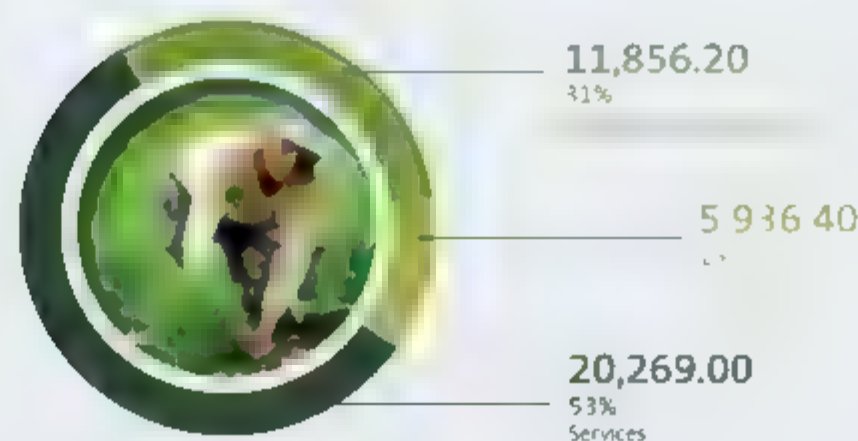
Despite the decline in its GDP contribution, agriculture made its impact on the economy in those areas where agricultural outputs are utilized as industrial inputs, particularly in the manufacturing subsector. Agn-based manufacturing consisting of food, beverage, and tobacco accounted for 41 percent of the manufacturing subsector from 2011 to 2015. (See Fig. 5)

Figure 3. Average GDP by industrial origin at constant prices, 2011 – 2015 (in Php million)



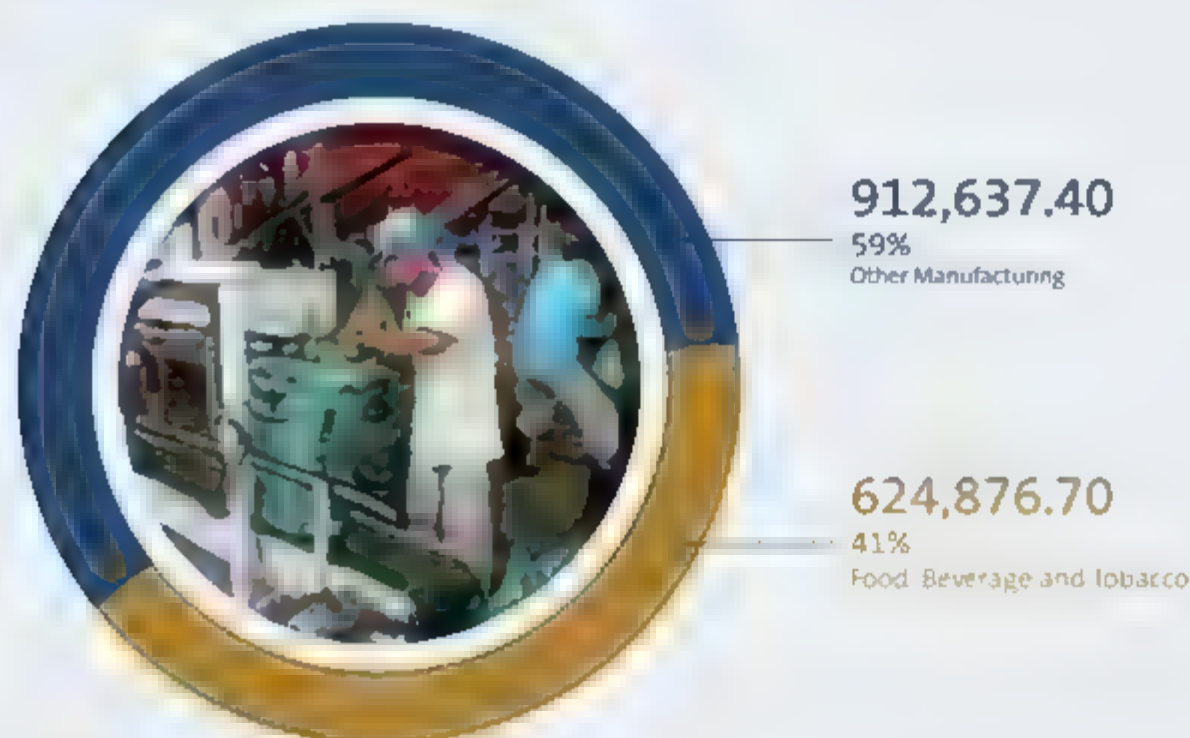
Source of raw data: PSA

Figure 4. Average number of employed persons by sector, 2011 – 2015 (in thousands)



Source of raw data: PSA

Figure 5. Average share of subsectors in manufacturing, 2011 – 2015
(Php million at constant prices)



Source of raw data: PSA

Top contributors to agricultural performance. In 2015, eight commodities accounted for about 80 percent of the Php 719.32 billion GVA in AFF. These include palay, fisheries, livestock, poultry, corn, banana, coconut (including copra) and pineapple. Fisheries ranked highest from 2005 to 2011 but has dropped to second place since 2012 as a result of the decline in its value in 2010. The list has generally remained unchanged over 2011 – 2015 except for shifts in the eighth position held by sugarcane in 2011 – 2012, pineapple in 2013, and mango in 2014. (See Table 3.)

Table 3. Eight commodities that compose 80% of GVA in AFF, 2015

Commodity	2015 GVA in Phs. million (at constant 2000 prices)	% Share
1. Palay	141,569	19.68
2. Fisheries	128,109	17.81
3. Livestock	99,557	13.84
4. Poultry	82,340	11.45
5. Corn	40,802	5.67
6. Banana	33,230	4.62
7. Coconut (including copra)	28,207	3.92
8. Pineapple	16,533	2.30
9. Others	148,796	20.71
TOTAL	719,323	100.00

Source: PSA

Highest in growth rate. The following topped the list of commodities with the highest growth rate from 2010 to 2015: cassava, dairy, sugarcane, chicken, pineapple, corn, duck eggs, palay, chicken eggs, and hog. (See Table 4)

Table 4. Top ten fastest-growing commodities, 2010 and 2015 (in thousand metric tons)

Commodity	Volume (thousand metric tons)		Growth Rate, %
	2010	2015	
1. Cassava	2,101.45	2,714.10	29.15
2. Dairy	15.86	20.39	28.56
3. Sugarcane	17,929.27	22,926.44	27.87
4. Chicken	1,353.13	1,660.81	22.74
5. Pineapple	2,169.23	2,582.69	19.06
6. Corn	6,376.80	7,518.76	17.91
7. Duck Eggs	36.68	42.40	15.59
8. Palay	15,772.32	18,149.84	15.07
9. Chicken Eggs	387.34	444.55	14.77
10. Hog	1,898.16	2,120.33	11.70

Source: PSA

Consumer prices. Food prices have remained affordable in the last five years, increasing at an average of 4.46 percent per year. Rice prices, which became the center of controversy due to a perceived "shortage" in 2013, registered a slower average inflation rate of 3.85 percent from 2011 to 2015 compared to 5.94 percent from 2001 to 2010. Only in 2014 did rice prices register a spike due to pressures on supply brought by the lingering effects of Typhoon Yolanda. Meat, on the other hand, registered the lowest price increase at 2.41 percent. Fish prices, even with declining production, remained low with an average increase of 5.86 percent from 2011 to 2015 comparable to the 5.13 percent increase from 2001 to 2010. (See Table 5.)

Table 5. Inflation rate of selected commodities, 2001-2015 (in percent)

	Average						
	2011-2015						
Item	2001-2010	2011	2012	2013	2014	2015	2015
All Items	5.22	4.47	3.44	2.96	4.19	1.41	3.29
Food	5.33	4.12	5.69	2.87	7.03	2.59	4.46
Rice	5.94	1.76	-0.26	4.21	11.91	1.63	3.85
Meat	4.99	1.23	2.64	2.07	4.40	1.70	2.41
Fish	5.13	6.51	10.11	3.13	5.22	4.32	5.86

Source of raw data: PSA

Average increase in food prices of 4.46% from 2011 to 2015 was lower compared to the average food inflation rate of 5.33% from 2001 to 2010



Agricultural Trade. Agri-based exports increased by 63.81 percent from 2011 to 2014, over four times the increase in the country's total exports for the same period. On the other hand, agri-based imports grew at a slower rate of 28.71 percent. This led to a reduced share of agri-based trade deficit from 56.66 percent in 2007 – 2010 to 32.61 percent in 2011 – 2014. (See Table 6.)

Table 6. Trade performance, 2007 – 2010 and 2011 – 2014

	Average Value, US\$ billion		Growth Rate, %
	2007 – 2010	2011 – 2014	
Agri Exports	3.57	5.85	63.81
Total Exports	47.37	54.74	15.55
% share of agri to total exports	7.5	10.70	
Agri Imports	6.52	8.39	28.71
Total Imports	52.57	62.52	18.93
% share of agri to total imports	12.40	13.42	
Agri Deficit	-2.95	-2.54	-13.86
Total Deficit	-5.20	-7.79	49.66
% Share of agri to total deficit	56.66	32.61	

Source: PSA

Free from major livestock and poultry diseases, the country's meat exports nearly doubled from US\$ 29.04 billion in 2007 – 2010 to US\$ 56.68 billion in 2011 – 2014. A notable development is Davao-based Pekin duck producer Maharlika Agro-Manne Ventures Corp., who entered the Japanese market in 2014. In 2016, the company began exporting whole and choice cuts of Pekin duck to markets in the United Arab Emirates and other Middle East nations upon its acquisition of Halal accreditation in December 2015.

Further, fishery exports rose dramatically from US\$ 634 million in 2010 to US\$ 1.156 billion by 2013. The increase is attributed to the improved management of fishery resources, notably, the export of higher value fishery products. In addition, the introduction of other species such as the yellow eel or *Monopterus albus* (previously considered a pest in rice farms) as a potential export product has contributed to the increase. From merely US\$ 4.33 million or Php 187.76 million in 2011, the value of yellow eel exports reached US\$ 38.77 million or Php 1.72 billion in 2014.

Growth in agri-based exports
outpaced the increase in total exports.

Rising farm incomes. Improving production and favorable farmgate prices resulted in increases in farm incomes as shown in the following table. Over the course of four years, triple-digit growths were recorded by corn, cabbage, eggplant, habichuelas and cashew. The major crop, palay, which used to earn Php 15,830 per hectare per cropping in 2010 has doubled to Php 31,375 per hectare per cropping in 2014. Meanwhile, income from corn tripled from Php 5,760 per hectare per cropping in 2010 to Php 16,712 in 2014. A similar upward trend was reported in the per hectare income of 16 other commodities (See Table 7.)



Agri-based export products from SOCCSKSARGEN were showcased during the travel and trade expo “Treasures of Sox” organized by the DOT in partnership with the DA, DENR, DTI and DOLE. The event was held at the Glorietta Activity Center, Makati City on 11 – 14 April 2016.

Crops	2010	2014	Increase in Net Returns	Growth Rate, %	
				4-year	Annual
Php per hectare					
Per acre/ha					
Paddy	1,830	31,335	15,845	98.20	24.55
Corn	5,760	16,712	10,952	190.14	47.53
Annual					
Cassava	30,822	59,325	17,503	48.58	12.52
Sweet Potato	25,945	51,151	25,206	97.15	24.29
Mango	20,087	23,319	3,232	16.09	4.02
Peanut	24,360	32,475	8,115	33.31	8.33
Ampalaya	40,127	67,762	27,635	68.87	17.22
Cabbage	24,662	119,055	94,393	382.75	95.69
Carrots	120,932	269,451	148,519	122.81	30.70
Cauliflower	104,287	190,451	86,164	82.62	20.66
Eggplant	10,245	71,512	61,267	598.02	149.50
Garlic	133,731	165,675	31,944	23.89	5.97
Habitchuelas	5,880	17,353	11,473	195.12	48.78
Pineapple	126,745	240,085	113,340	89.42	22.36
Watermelon	107,698	142,279	34,581	32.11	8.03
Cashew	6,663	14,666	8,003	120.11	30.03
Pili	66,829	84,233	17,404	26.04	6.51
Calamansi	87,300	114,428	25,128	28.78	7.20

Challenges. From 2011 to 2015, production losses and damage to infrastructure caused by calamities amounted to Php 163.6 billion in the agricultural sector. Production losses included 2,888,955 metric tons of palay and 1,024,498 metric tons of corn. The heaviest losses are attributed to some of the strongest typhoons ever recorded in Philippine history. The devastation caused by these natural calamities inevitably slowed down the growth of the agri-fishery sector.³

- Php163.6 billion
in production
losses and
damage to
infrastructure
caused by
calamities from
2011 to 2015



Commodity Programs Focus on Value Chains

National Rice Program

Rice – a staple food of 80-85 percent of Filipinos – is produced by more than two million farmers and farm laborers and is made available to the market by tens of thousands of traders. It is planted on some 2.8 million hectares of farms, more than 60 percent of which is irrigated. In terms of economic contribution, palay accounts for 20 percent of the gross value added (GVA) in the agn-fishery sector. Rice made up 4.3 percent of agriculture imports from 2011 to 2015 compared to 20.3 percent share in imports from 2007 to 2010.

Despite being ranked as eighth top producer of rice in the world, the Philippines was also the “world’s largest rice importer” from 2005 to 2010.⁴ It must be noted that despite the quantitative restriction currently in effect, the country has never imported less than 350,000 metric tons.⁵ In 2008 and 2010, the country recorded the highest levels of rice imports at 2.4 million metric tons. This increase led to the ballooning of the NFA’s outstanding debt, from Php 24.87 billion in 2004 to Php 169.54 billion in 2010. The country’s import dependency almost doubled from 9.1 percent in 2003 to 18.1 percent in 2010 (PSA).

Food Security Policy

Section 2. Declaration of Policy, AFMA of 1997, RA 3485:

“The State shall promote food security, including sufficiency in our staple food namely rice and white corn. The production of rice and white corn shall be optimized to meet our local consumption and shall be given adequate support by the State.”

This food security policy was reiterated by President Aquino during his 2nd State of the Nation Address on 25 July 2011:

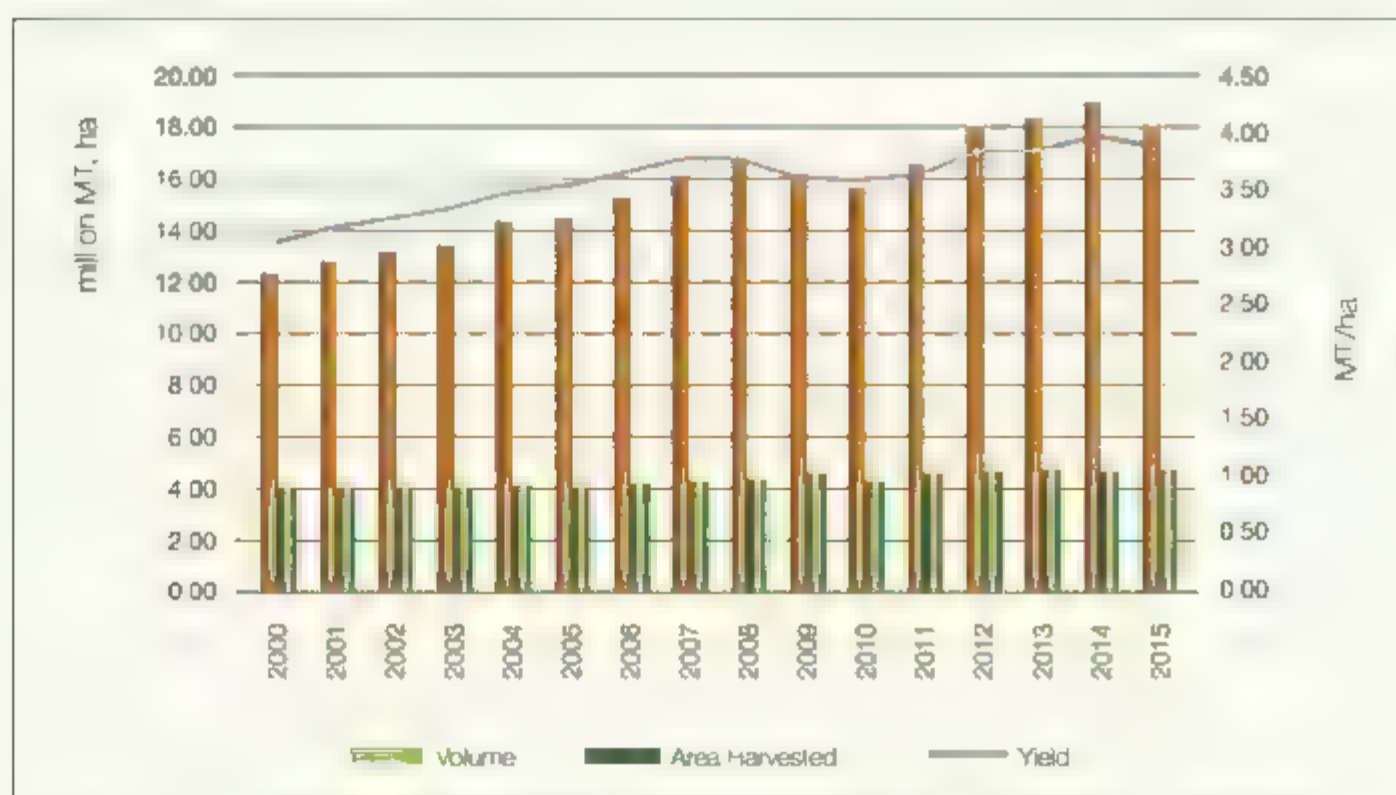
“Ang gusto nating mangyari: Una, hindi na tayo aangkat ng hindi kailangan. Ikalawa, ayaw na nating umasa sa pag-angkat. Ang isasaing ni Juan de la Cruz, dito ipupunla, dito aanihin, dito bibilhin.”

As a response, the Food Staples Sufficiency Program (FSSP) aimed to (1) reduce the country's dependency on imports and protect consumers from price fluctuations in the world market, (2) eliminate the scandal-ridden seeds and fertilizer subsidy, and (3) invest in irrigation, production and postharvest facilities and equipment. Through the FSSP, high impact research and development that will revolutionize rice farming and that will be used as basis for policy decisions were carried out. An affordable and sustainable credit program was introduced and mainstreamed, and farmer's choice was used as the guiding principle in project formulation.

The FSSP has raised the palay production level from 15.77 million metric tons in 2010 to 18.15 million metric tons in 2015 despite the devastating calamities that the country faced. In 2014, the Philippines was considered the fastest-growing rice producer in the world based on the US Department of Agriculture data.⁶ The El Niño phenomenon in 2015 slowed down the growth of production but without causing a drop below the 18-million metric ton mark. (The highest production reached before 2010 was 16.82 million metric tons in 2008.) This level of palay production is equivalent to some 11.7 million metric tons of milled rice (at 65% milling recovery) or about 117 kg per Filipino (at a population of 100 million), slightly above the rice requirement or per capita consumption of 114.27 kg based on the 2012 Survey on Food Demand.

Both area harvested and yield improved to deliver the record production. Area harvested expanded by more than 300,000 hectares from 4.35 million hectares in 2010 to 4.66 million hectares in 2015. Meanwhile, yield improved from 3.68 metric tons per hectare in 2010 to 3.90 metric tons per hectare in 2015 as a result of investments in irrigation. (See Fig. 6.)

Figure 6 Palay Production (million metric tons), area harvested (million hectares) and yield (metric tons per hectare), 2000 – 2015



Source: PSA



The table below shows the state of the Philippine rice industry in 2001 – 2010 compared to 2011 – 2014

Table 8. State of the Philippine rice industry, 2001-2010 and 2011-2014

	2001-10	2011-14	% Increase/ (Decrease)
Average annual production, million tons	14.92	18.05*	20.97
Per capita consumption, kg/yr	119.08 (2008-09)	114.26 (2012)	(4.05)
Self-sufficiency ratio, %	86.43	93.72	8.43
Import dependency ratio, %	13.57	6.28	(53.72)
Average annual increase in NIA service area, hectares	13,809	45,370	228.55
Income per hectare per cropping, pesos	11,286**	20,973	85.83
Annual inflation rate, %	5.94	3.85	(35.19)

* Average production from 2011 to 2015

** Average net returns from 2002 to 2010

Source of raw data: PSA

The country continues to import rice to cover its buffer stock requirement to ensure supply in between cropping cycles. This is equivalent to 90 days' worth of supply at the start of the lean months on 01 July of each year. Rice imports also compensate for crop damage due to severe calamities. However, increasing production has resulted in less dependence on imports which has significantly decreased from 13.57 percent from 2001 to 2010 to 6.28 percent from 2011 to 2014. In terms of volume, the import requirement or the gap between production and total utilization was reduced by 40 percent or about 700,000 metric tons per year.

Interventions through the National Rice Program from 2011 to 2015 included the following:

Intervention	Highlights
Production Support	<ul style="list-style-type: none"> Established 14 and rehabilitated 25 community seed banks in lieu of seed subsidy which adopts the informal seed exchange system Distributed 385,744 bags of 2 kg starter seeds to initialize operations of the seed banks Distributed 1.57 million kg of hybrid and 22.14 million kg of inbred seeds to promote use of high quality seeds and as support for immediate replanting after typhoons from 2011 to 2015 Distributed 13.46 million kg of hybrid seeds for the High-Yield Technology Adoption (HYTA) project in 2015

Intervention	Highlights
Irrigation	<ul style="list-style-type: none"> Constructed and restored 219 093 hectares of irrigated service area through the National Irrigation Administration from 2011 to 2013 Generated 37 468 hectares and restored 18 380 hectares of irrigated service area by small scale irrigation projects under the Bureau of Soils and Water Management from 2010 to 2015
Farm Mechanization	<ul style="list-style-type: none"> Distributed the following from 2011 to 2015: <ul style="list-style-type: none"> 2 446 tractors (and farm 4WD and mini 4WD tractors) 257 transplanters (including riding type) 132 tillers 200 reapers 802 harvesters (including combine harvester with and without harrow) 1 463 sprayers 8 683 other farm machinery
Postharvest Equipment/Facilities	<ul style="list-style-type: none"> Distributed the following from 2011 to 2015: <ul style="list-style-type: none"> 1,970 threshers 76 milling equipment 478 flatbed dryers and 18 mechanical dryers 45 storage equipment 706,452 laminated sacks 3 other dryers and 7,097 postharvest equipment and machinery Established the following postharvest processing facilities during the same period: <ul style="list-style-type: none"> 76 rice processing centers (94 more under various stages of implementation) 2 437 multi-purpose drying pavements 357 paddy sheds 108 warehouses 228 other storage facilities 8 6 other drying facilities 1 other postharvest facility
Extension	<ul style="list-style-type: none"> Conducted 6 139 Farmer Field Schools and 1 156 training of trainers from 2011 to 2015

Mechanization of production. To boost the mechanization of farms, the DA launched Makina Saka in 2011, a special gathering of farmers and suppliers. At this event, farmers are able to view a wide range of farm machinery and equipment from various exhibitors, helping them make an informed choice on their purchase. To ensure greater participation, Makina Saka has been held in various locations in Luzon, Visayas, and Mindanao, giving more farmers the opportunity to attend.

Along with this initiative, in 2012, farm machinery has been made available at a new cost sharing scheme of 85:15 (85% cost to DA, 15% to farmers), previously pegged at 50:50. The scheme was further adjusted in 2015 to 90:10 to accelerate the mechanization program



The Firmus Farm Service Cooperative based in Ambalgan, Sto. Nino, South Cotabato received a Php 34-million Rice Processing Center patterned after the KUSA-funded rice processing complexes (RPCs). The facility houses two biomass-fed mechanical dryers capable of drying 100 bags of palay in 8 hours, a rice mill capable of processing 30 bags of palay per hour, and a storage facility with a capacity of 100,000 bags of palay at 50 kg per bag.

A new trend in rice farming is the widespread use of the combine harvester. Initially unpopular in rural communities due to its tendency to displace labor, the use of the combine harvester has become widespread as the private sector embraced the benefits of using the machine: lower harvest losses, better quality of grains, and lower costs. At the end of 2014, based on a study conducted by the Philippine Center for Postharvest Development and Mechanization (PhilMech), the number of combine harvesters in the country reached 1,806 units. It must be noted that out of this number only 240 units had been initially distributed by the DA, proving the newfound interest for the equipment within the private sector.⁷ Further, the study found that the use of the mechanical transplanter and combine harvester has reduced the average cost of rice production from Php 11.07 per kg to as low as Php 7.87 per kg based on surveys conducted in Ilocos Region, Cagayan Valley, and Central Luzon.

Credit. The FSSP introduced the **Sikat Saka Program (SSP)** as its credit component. The SSP is a multi-agency collaboration between the Land Bank, the Agricultural Credit Policy Council (ACPC), the Philippine Crop Insurance Corporation (PCIC), the National Irrigation Administration (NIA), the National Food Authority (NFA), and the Agricultural Training Institute (ATI). Together, these agencies compose the Provincial Action Teams (PAT) headed by the DA Regional Executive Director.

Through the SSP, farmers are able to establish their individual credit track record. By design, the SSP requires farmer borrowers to attend a credit worthiness orientation, obtain an endorsement as a member of good standing from his irrigators' association and to put up a table collateral as a sign of intent to honor the loan obligation. Once approved, loans are released in full to the farmer's own ATM account. This ensures that the farmer has access to funds at any stage in the production cycle. To encourage sustained repayment, farmers pay a lower interest rate per cropping from 15 percent in the first and second cycles, decreasing by 1.0 percent per cycle thereafter, to 9 percent by the eighth cycle.

The initial program fund for the SSP was provided by the DA with a Php 200-million allocation. This was matched by another Php 200 million funded by the Land Bank. The program was first rolled out in four major rice-producing provinces (Isabela, Nueva Ecija, Iloilo, and North Cotabato) in 2012 and was expanded to 45 provinces in 2015. As a result, by the end of 2015 a total of 8,304 small farmer borrowers were able to borrow more than Php 2.0 billion to finance their production. By the end of that year, 16 farmers were already on their eighth cycle, paying an interest rate of 9 percent per annum or 4.5 percent per cropping cycle.

The SSP boasts of having the highest repayment rate among current credit programs at 92 percent, with most cases of non-repayment attributed to farms damaged by calamities.

Kung hindi dahil sa Sikat Saka, baka baon pa din ako sa utang. Alam niyo bang ako ay nagpapatubo ng 36 na kaban tuwing anihan sa inuutang kong gamit sa bukid? Ngayon, sa Sikat Saka, wala pang Php 4,000 ang naipatubo ko sa hiniram kong puhunan na Php 57,000.”

– Roberto C. Madria, member of the Makabilog-Maynabo-Tambo Irrigators' Association Inc. in Penaranda, Nueva Ecija. Note: Thirty-six cavans of palay amounts to Php 30,600 at 50 kg per cavan and Php 17 per kg.

Research and Development (R&D). Seven R&D projects in partnership with the International Rice Research Institute (IRRI) were carried out under the FSSP: (1) Benchmarking the Philippine Rice Economy Relative to Major Rice-Producing Countries in Asia, (2) Accelerating the Development of Associated Technologies for Direct-Seeded Rice in Irrigated and Rainfed Ecosystems, (3) the Philippine Rice Information System (PRISM), (4) Improving Technology Promotion and Delivery through Capability Enhancement of Next Generation (Next-Gen) Rice Extension Professionals and Farmer Intermediaries, (5) Accelerating the Development of Next-Gen Rice Varieties for the Major Ecosystems in the Philippines, (6) Rice Crop Manager and Rice Doctor for providing individual online technology-based prescriptions to enrolled farmers, and (7) Raising Productivity and Enriching the Legacy of Heirloom/Traditional Rice in Unfavorable Rice-Based Ecosystems (Heirloom Rice).



Meanwhile, the Rice Program developed four upland rice varieties suitable for conditions that do not require continuous irrigation, serving as alternatives during dry spells. Fifteen saline-tolerant varieties were also developed. The Green Super Rice, a multi-stress variety from IRRI, was farm tested in 10 DA experimental farms.

In Nueva Ecija, AgrInnovation is quietly taking place. The Philippine Center for Postharvest Development and Mechanization (PhilMech) is continuously developing farm machinery and postharvest facilities adapted to local conditions. This includes machinery that can operate in small parcels of land compared to large imported machines that are unsuitable to small farms. For rice, there are the tractor-mounted rice transplanter and the tractor-mounted combine harvester (see PhilMech in Chapter 5).

Innovations. The achievement of record level palay production required changes in the way the DA implemented the Rice Program. Among the innovations introduced were

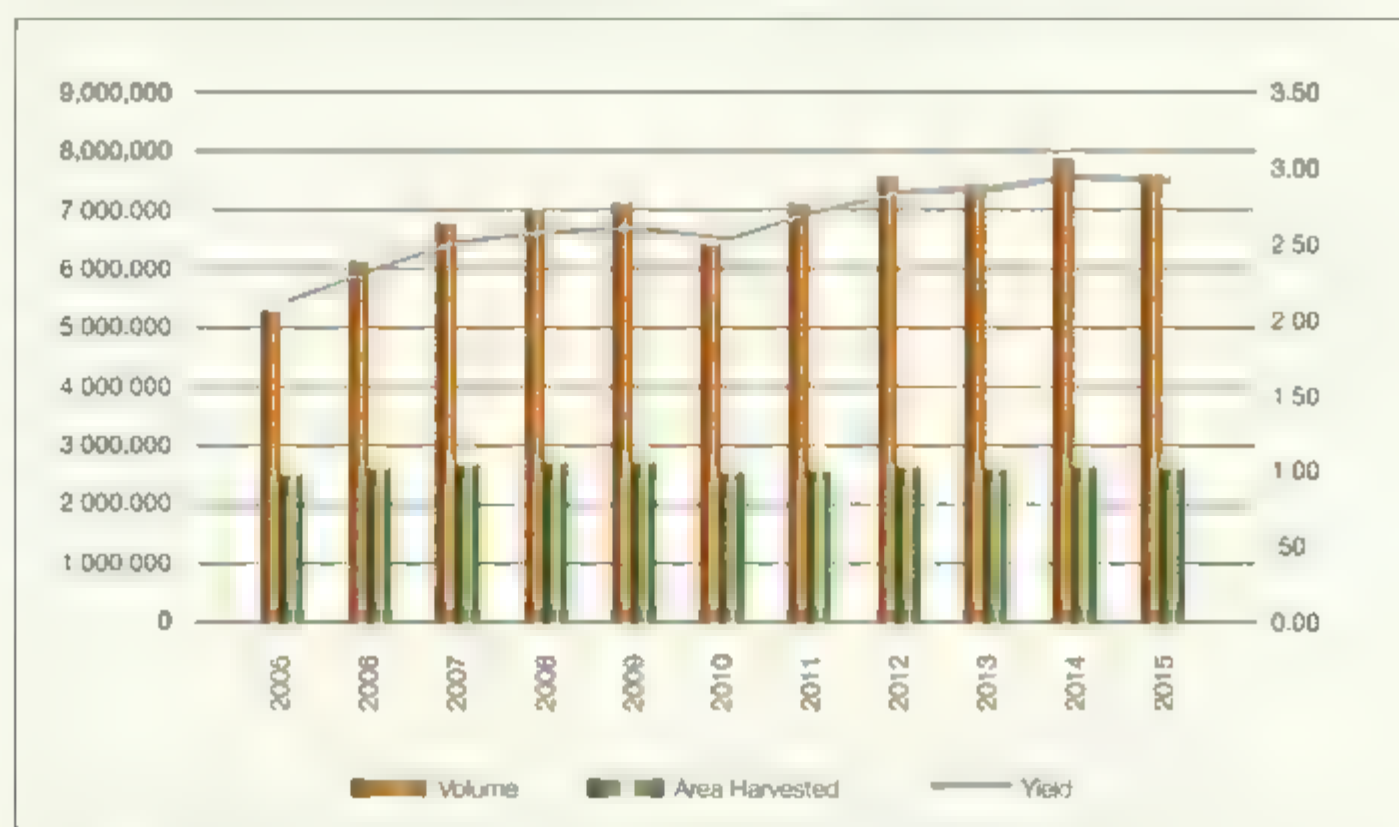
1. **Seed Buffer Stocking for Quick Turn Around.** To secure the food requirement of areas affected by calamities, the DA facilitates the quick clearing of debris from farms and the distribution of seeds from the seed buffer stock maintained by the DA Regional Field Office (RFO) so farmers can immediately replant. This ensures that no cropping is missed and that food supply is secure in the area. Under this scheme, every RFO maintains a seed buffer stock equivalent to 10 percent of the regional requirement. In the aftermath of Typhoon Santi and Typhoon Yolanda, the seed buffer stocks of other regions were also tapped to augment the seed supply of the affected areas.
2. **Farm machinery pools.** Each DA RFO established its own farm machinery pool that includes, in particular, tractors and combine harvesters that can be deployed before and after calamities. With the assistance of DA RFO Central Luzon, farmers in Nueva Ecija were able to harvest before Typhoon Santi hit in 2013. This helped save a significant portion of the harvest.
3. **Farm Service Provider Groups.** The downside of mechanization is labor displacement. To address this, the DA introduced the concept of farm service providers (FSPs) which involves the pooling of landless farm workers trained as machine operators and technicians.⁸ There are now 82 established FSPs nationwide, employing farm laborers who deliver mechanized land preparation, harvesting, and threshing services to paying farmers. FSPs are also deployed in typhoon-affected areas to fast track clearing and replanting activities.
4. **Community seed banks.** In remote communities, starter seeds were provided which recipients planted in individual or common seed growing plots to make good seeds available to more palay-growing communities. The surge in upland rice harvest upon the introduction of community seed banks is partly traced to this innovation.

National Corn Program

Recognizing its importance as food and input for animal feeds, the National Corn Program supports the development of white and yellow corn and cassava through various interventions such as production support, provision of farm machinery and postharvest facilities, irrigation and extension support.

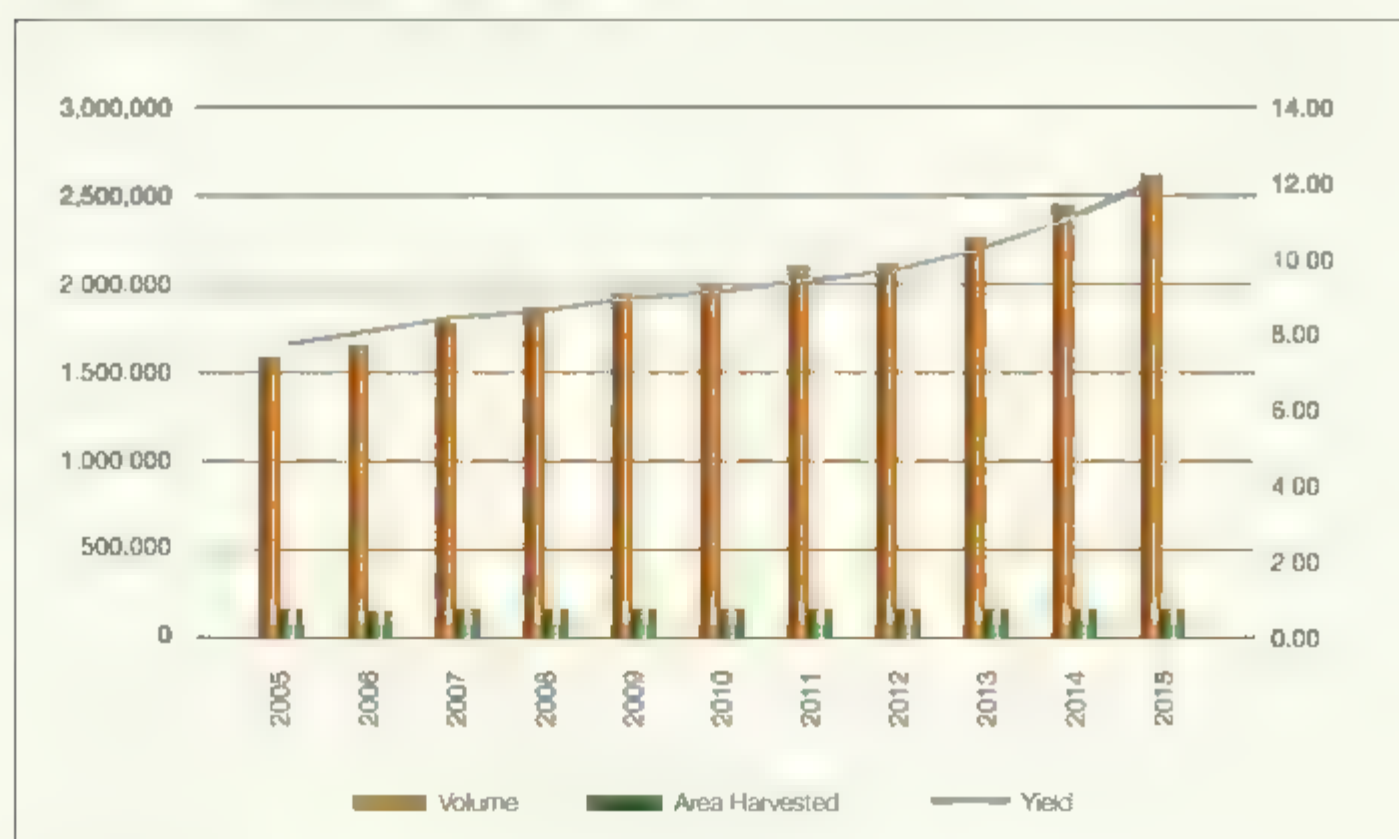
The country's corn production has bounced back from a drop in 2010 and has continuously improved in the succeeding years, recording a production level of 7.52 million metric tons in 2015, an average growth rate of 3.5 percent per year (Fig. 7). Meanwhile, cassava consistently grew at an average of 5.3 million per year from 2.10 million metric tons in 2010 to 2.71 million metric tons in 2015 notwithstanding the effects of typhoons (Fig. 8).

Figure 7. Corn: Volume (metric tons), area harvested (hectares), and yield (metric tons per hectare), 2005 – 2015



Source: PSA

Figure 8. Cassava: Volume (metric tons), area harvested (hectares), and yield (metric tons per hectare), 2005 – 2015

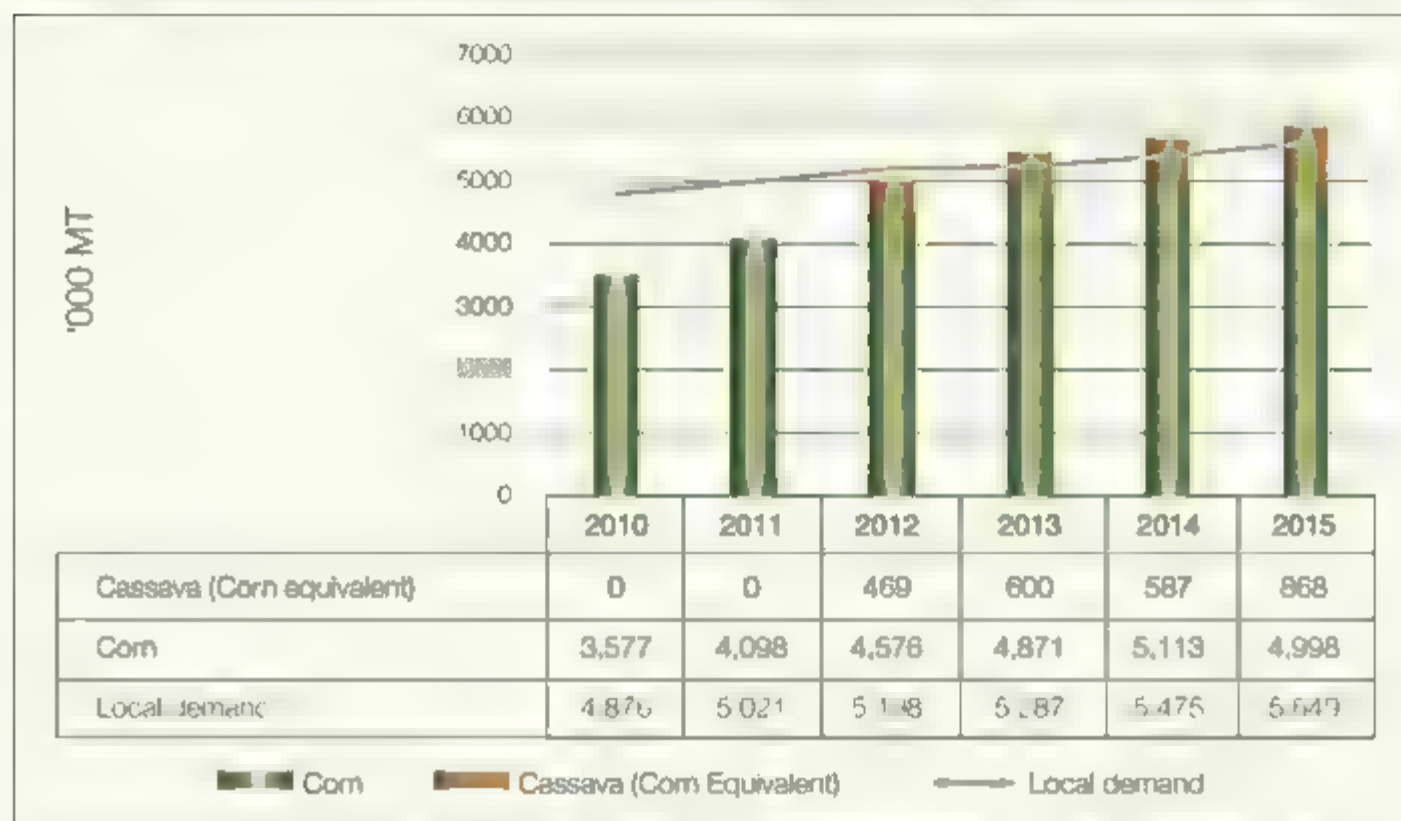


Source: PSA



In 2010, the country was only 73 percent sufficient in corn for feeds supply due to low production and the high level of postharvest losses (15%). The rest of the demand was filled by imports of yellow corn and feedwheat. This situation persisted in 2011. However, beginning in 2012, corn supply increased due to higher production and lower postharvest losses (12.7% in 2012 to 7.18% from 2013 to 2015). In addition, local feed millers had begun mainstreaming cassava as a corn substitute, resulting in the steady increase in the demand from 2012 to 2015. The Program responded accordingly by incorporating postharvest facilities for cassava among its interventions. This resulted in achieving sufficiency in feed requirement from 2013 to 2015 (Fig. 9). However, corn and feedwheat were still imported due to seasonality of production and the opportunity to avail of cheaper prices in the world market.

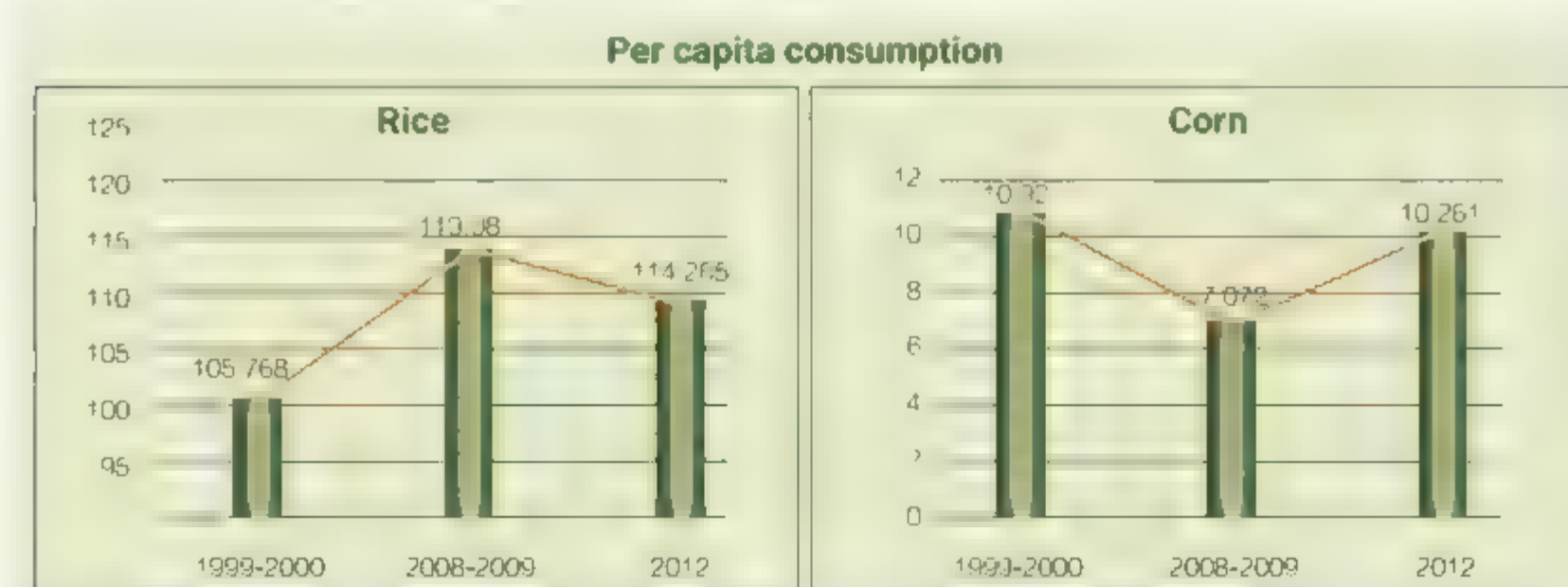
Figure 9 Livestock and poultry feeds: supply and demand, 2010 – 2015 (in thousand metric tons)



Sources: PSA, Philippine Association of Feed Millers, Inc.

On the other hand, white corn production augmented the food staples supply of the country. As part of the demand management component of the FSSP the promotion of other staples such as white corn was intensified. As a result, per capita consumption of white corn increased from 7.07 kg in 2008 – 2009 to 10.26 kg in 2012.

Figure 10. Annual per capita consumption of rice and corn, kg/year



Source: PSA

The Corn Program delivered the following interventions for corn and cassava from 2011 to 2015.

Intervention	Highlights
Irrigation Development	<ul style="list-style-type: none"> • Provided 1,736 units of shallow tube wells covering 5,208 hectares of service area
Production Support	<ul style="list-style-type: none"> • Distributed 1.76 million kq of registered/certified Open Pollinated varieties (OPV) and hybrid seeds • Distributed 16.05 million pieces of cassava high yielding varieties
Corn Clusters	<ul style="list-style-type: none"> • Established 1,000 corn clusters in partnership with farmer groups (e.g. PhilMaize) comprising 330,000 corn farmers
Farm Mechanization	<ul style="list-style-type: none"> • Distributed the following <ul style="list-style-type: none"> • 660 tractors • 72 corn planters • 31 combine harvesters • 9 corn pickers • 66 cassava diggers
Postharvest Facility and Equipment	<ul style="list-style-type: none"> • Established the following <ul style="list-style-type: none"> • 85 village type dryers • 1 cassava dryer • 13 silos • 24 grain dryers • Distributed the following <ul style="list-style-type: none"> • 367 corn mills • 205 hammer mills • 381 corn shellers • 525 cassava granulators • 119 cassava chippers • 311 cassava graters • 16 cassava pulverizers • 194 vacuum sealers • 65 moisture meters • 133 hermetic cocoons
Extension Support	<ul style="list-style-type: none"> • Capacitated and trained 189,336 farmers and AEWs in recent technology development through the conduct of 1,435 Farmers' Field Schools, 44 training of trainers, and 4,061 other trainings • Established 2,363 techno-demo sites

"Sa aming probinsiya, ang ibig sabihin po ng DA ay Department of Agriculture. Pero sa akin: Dami Ani, Dami Asenso, Dami Award. Sa teknolohiya sa pagtatanim ng mais na itinuro ng DA, ako po ay umaani ng 11 – 14 tonelada kada ektarya."

Joel Cabanayan, Bintawan Sur, Villaverde, Nueva Vizcaya, National Awardee, 2015 Gawad Saka Most Outstanding Corn Farmer



Farm mechanization, with counterpart funding arrangements from LGUs, cooperatives or farmer associations, improved efficiencies resulting to lower postharvest losses from 15 percent in 2010 to 12.7 percent in 2012. With the continuous assistance and positioning of the required postharvest equipment and facilities, losses dropped further to 7.18 percent in 2013.



With the mainstreaming of cassava as an ingredient for livestock and poultry feeds, cassava processing facilities such as cassava granulators were distributed to farmers' organizations on a counterparting scheme.

Moreover, the quality of the local production is at par with international standards: moisture content is at 14 percent and below, aflatoxin level is at 5 parts per billion (PPB) to almost nil levels (made possible through postharvest facilities), and the physical quality is at premium level.

National High-Value Crops Development Program

The High-Value Crops Development Program (HVCDP) promotes the production, processing, marketing, and distribution of high-value crops to increase farmers' income, create livelihood opportunities, and ultimately contribute to agricultural development. Major strategies implemented from 2011 to 2015 were geared towards boosting exports and substituting local production for imports.

The support delivered from 2011 to 2015 by commodity including some results of these interventions, are as follows

Commodity	Highlights of Interventions
Vegetables	<ul style="list-style-type: none"> Established 28 hanger storages in Nueva Ecija, Ilocos Sur, Ilocos Norte, Nueva Vizcaya, and Occidental Mindoro to assist onion and garlic farmers in the handling and temporary storage of onion to maintain its marketability and promote alternative lower cost postharvest facility compared to cold storage facility Assisted five farmer groups in obtaining Good Agricultural Practices (GAP) certificate to continue export of shallot to Indonesia Promoted exportation of yellow granex (onion) of National Onion Growers Cooperative Marketing Association, Inc. (NOGROCOMA) to Japan; promoted exportation of achuete produced by small and indigenous farming communities in Davao City to Vietnam
Banana	<ul style="list-style-type: none"> Established two standard packinghouses and rehabilitated four facilities in Davao Region to address scale insect concerns and to continue exporting to China Facilitated quick access to production loans immediately after Typhoon Pablo Gained access to US market Addressed the problem of Fusarium wilt in Davao Region by introducing GCTCV 219 variety, introduced crop shifting (cacao-coffee-cassava-corn-vegetables), and deployed 10 plant pathologists to work with LGU technicians for the implementation of the Fusarium Management Program
Mango	<ul style="list-style-type: none"> Developed modules and conducted trainings for mango classifiers to ensure that mangoes for both international and domestic markets are properly classified to meet existing quality standards Strengthened the implementation of the Project Eradication of Mango Pulp Weevil (MPW) in Palawan and Intensification of Plant Quarantine Service Operation The US Government declared the Philippines (except Palawan) as Mango Pulp and Seed Weevil free on February 2013. The declaration led to the signing of a Special Commodity of Understanding for the Importation to Australia of fresh mango from the Philippines during the Philippines-Australia Agriculture Forum in July 2013. That same year, a total of 6.05 metric tons of mangoes was shipped to Australia from Davao.
Coffee	<ul style="list-style-type: none"> Distributed more than 10.4 million coffee seedlings planted on 11,895 hectares from 2011 to 2015 under the Coffee Expansion Program Developed 17 community-based coffee-roasting centers to enable coffee growers to process and add value to their raw green coffee beans and be able to retail roasted coffee at the community level Established and expanded coffee nursery sites in five DA Research Outreach Stations to boost the Robusta coffee seedling production in partnership with Nestlé Philippines
Cacao	<ul style="list-style-type: none"> Planted 4.60 million pieces of cacao quality planting materials in 7,729.18 hectares from 2011 to 2015 under the Cacao Expansion Program Established five Cacao Agribusiness Zones equipped with central fermentation and drying facilities (both solar and mechanical dryers), quality assurance equipment, central nursery and budwood garden and warehouse in the following: Davao City (Cocoa Foundation of the Philippines), Compostela Valley (OPAG-Compostela Valley), Zamboanga del Norte (Roteo Farm), Palawan and Camarines Sur (Sebastian Perez Farm, served as demo farm)
Pineapple	<ul style="list-style-type: none"> Conducted techno-demos for different varieties of pineapple (MD2, Ulam Pine and Local variety) in the following areas: Lucena, Quezon; Daet, Camarines Norte; Calauan, Laguna; and Silang, Cavite
Rubber	<ul style="list-style-type: none"> Provided 2.69 million pieces of rubber planting materials to an area of 5,379.55 hectares from 2011 to 2015 under the Rubber Expansion Program Established a Rubber Testing Laboratory in Zamboanga Peninsula Integrated Agricultural Research Center (ZAMPIARC), Zamboanga Sibugay that conducts the following laboratory tests: Volatile Matter Determination, Rapid Plasticity and Plasticity Retention Index, Determination of Ash Content, and Mooney Viscosity Analysis Supported the 1st Philippine Rubber Investment and Market Encounter (PRIME) in 2012 which focused on providing access to market and investment opportunities in one venue



In addition to these interventions, nine high value crops roadmaps were completed in 2014 which include coffee, banana, saba, onion, mango, pineapple, highland and lowland vegetables, and cacao. These roadmaps were prepared with other government agencies, industry experts, and farmers to identify development areas, boost competitiveness, and guide future programs and public investment as well as identify the overall direction of each commodity.



To maximize the income of farmers from planting coffee, the HVCDP developed 17 community-based coffee roasting facilities to enable them to process their coffee and sell roasted coffee beans which is priced better than raw green coffee beans.

National Livestock Program

Through the efforts of the National Livestock Program, the country maintained its status of being free from major animal diseases: Foot and Mouth Disease (FMD) and Avian Influenza (AI). In particular, there was zero incidence of AI recorded in the last five years, while the entire country was declared FMD-free without vaccination in May 2015—an upgrade from the previous zonal declarations.⁹ In addition, in May 2015 the country was declared free from Peste des Petits Ruminants (PPR), a highly contagious disease that affects small ruminants such as goats and sheep.

The FMD-free status of the Philippines paved the way for the country to export beef to Brunei, while our AI-free status enables us to continuously export poultry meat to Japan, Kuwait, and Thailand. In 2013, Philippine poultry products were made available in the Dubai market after the accreditation of two slaughterhouses of San Miguel Foods, Inc./Johannas Processing Centers in Lucena City and Tiaong, Quezon.

Livestock and poultry production increased by 14.87 percent and 23.25 percent at constant and current prices, respectively. The table below shows the volume and value of production of livestock and poultry commodities. Except for carabao and goat, there was an increase in volume of almost all commodities. Additionally, each registered positive double-digit growth rates in terms of value at current prices. Overall, livestock and poultry accounted for 32.22 percent and 29.04 percent of the total value of agriculture at constant and current prices, respectively (Table 9).

Table 9. Volume and value of livestock and poultry production, 2010 and 2015

Commodity	Volume (thousand metric tons)		Value (Php billion)				% Change		
	2010	2015	Constant		Current Prices		Volume	Value	
			2010	2015	2010	2015		Constant	Current
LIVESTOCK			120.27	132.38	210.4	252.12		10.07	19.79
Carabao	148.02	142.04	5.54	5.32	10.04	11.06	-4.04	-3.93	10.14
Cattle	251.74	266.90	11.96	12.68	20.58	24.54	6.02	6.04	19.23
Hog	1,898.16	2,120.33	98.86	110.45	1,205	206.94	11.70	11.73	20.28
Goat	78.45	77.48	3.69	3.65	7.31	8.92	-1.24	-1.22	22.04
Dairy	15.86	20.39	0.22	0.28	0.48	0.65	28.56	28.50	35.52
POULTRY			100.96	121.75	151.53	194.06		20.59	28.06
Chicken	1,353.13	1,660.81	16.36	93.4	112.51	144.79	22.14	22.76	28.69
Duck	32.98	33.94	1.78	1.83	2.50	2.83	2.91	2.98	13.11
Chicken Eggs	387.34	444.55	21.23	24.33	33.66	42.65	14.77	14.64	26.72
Duck Eggs	36.68	42.40	1.60	1.85	2.86	3.9	15.59	15.60	32.45
TOTAL			221.23	254.14	362.00	446.16		14.87	23.25

Source: PSA



Interventions delivered by the Livestock Program from 2011 to 2015 include:

Intervention	Highlights
Production Support	<ul style="list-style-type: none"> Distributed 153,319 head of livestock and poultry from 2010 to 2015 to assist in business start-up and recovery after calamities Distributed 1,184,955 semen straws for artificial insemination for genetic improvement
Infrastructure Support	<ul style="list-style-type: none"> Rehabilitated two stock farms of the Bureau of Animal Industry: National Swine and Poultry Research and Development Center (BAI-NSPRDC) and the National Artificial Breeding Center (NABC) Established a Liquid Egg Processing Plant for Batangas Egg Producers Cooperative (BEPCO) and liquid nitrogen plants in Tuguegarao, Masbate, Tacloban, General Santos, and Negros Occidental Completed 16 slaughterhouse facilities from 2011 to 2015 under the National Abattoir Development Program, through 100 percent grant financial assistance to LGUs who lack financial capacity to build such facilities
Research and Development	<ul style="list-style-type: none"> Conducted research on Microbial Risk Assessment of Frozen and Newly Slaughtered Meat in the Philippine Wet Market 2012 in collaboration with the NFA Food Development Center
Extension Support, Education and Training Services	<ul style="list-style-type: none"> Conducted research on Halal Livestock Production Systems in partnership with the University of Southern Mindanao Developed Livestock and Poultry Information and Early Warning System to provide concrete and reliable data on the situation and outlook of supply and demand of broiler meat and pork in the regions Equipped 114,322 farmers and AEWs from 2010 to 2015 to undertake service delivery and program implementation in their respective municipalities and groups. Trainings included livestock product utilization, Farmer Livestock School, Goat Enterprise Management, and advanced artificial insemination, among others.

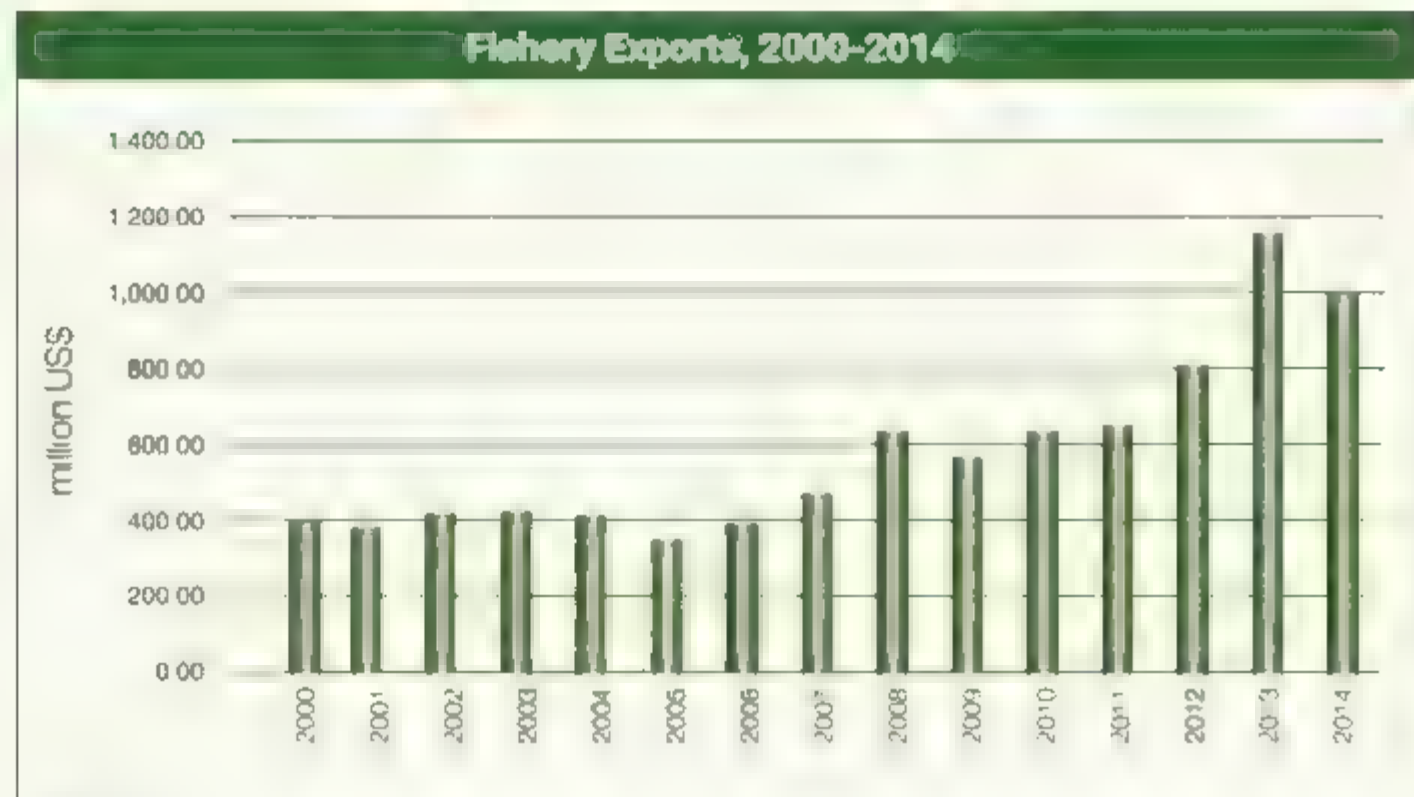
The uninterrupted growth of the livestock and poultry sector has kept the meat inflation rate at an average of 2.41 percent per year from 2011 to 2015—less than half of the 4.99 percent average from 2001 to 2010.

National Fisheries Program

The National Fisheries Program focused on (1) rehabilitating and regenerating fishery resources, (2) protecting viable production areas, (3) promoting environment-friendly and sustainable means of capture and fish farming, and (4) reducing postharvest losses as a means to improve fisheries production. The successful enforcement of annual closed seasons to allow spawning, the deployment of fish aggregating structures or payao to attract fish and make catching easier, the massive planting of mangroves, the increase in fishery law enforcers and patrol boats were some of the methods introduced by the Bureau of Fisheries and Aquatic Resources (BFAR) to arrest the decline in fishery yields caused by unsustainable fishing methods.

From 2011 to 2015, the total volume of fisheries production contracted by 1.84 percent. The fisheries subsector accounted for 17.8 percent of the total agricultural output during the same period. Gainers in the subsector were milkfish, tilapia, tiger prawn, and skipjack. Fishery exports, on the other hand, showed strong performance in the last four years, rising from US\$ 634 million (or Php 28.6 billion) in 2010 to US\$ 994.6 million (or Php 44.2 billion) in 2014. The highest value of exports was recorded in 2013 at US\$ 1.16 billion (or P49.2 billion)—also the biggest annual increase that took place from 2001 at 42.6 percent in 2012–2013.¹⁰ (See Fig. 11.)

Figure 11. Fish and fish preparations exports, 2001 – 2014 (in US\$ million)



Source: PSA

By focusing on value rather than the volume of catch, fisheries contributed to the surge in agri-based exports.

To increase production, the Fisheries Program implemented the following programs.

Intervention	Highlights
Philippine National Aquaculture Program	<ul style="list-style-type: none"> Planted 78.5 million mangrove propagules that benefited 20,927 fisher families
Low input Aquaculture Technologies	<ul style="list-style-type: none"> Established 186 seaweed nurseries where 1,518 seaweed farmers were provided with 8,343 seaweed propagules and 4,844 seaweed farm implements
National Payao Program	<ul style="list-style-type: none"> Deployed 1,354 units of payao in strategic areas in the country to reduce the time and cost spent searching for fish
Community Fish Landing Centers	<ul style="list-style-type: none"> Constructed 22 units of community fish landing centers with (1) concrete-roofed facility that complies with basic food hygiene requirements and is able to withstand natural climate-related hazards, (2) stainless steel market fish stalls, (3) and two units freezers
Assistance to Yolanda Victims	<ul style="list-style-type: none"> Provided 33,043 units of newly-built and repaired boats
Barangay Pinoy Program	<ul style="list-style-type: none"> Distributed more than 4,000 reinforced fiber glass boats to Typhoon Yolanda victims

As of April 2016, BFAR has registered 1,680,770 fishers in the Municipal Fisherfolk Registration System (FishR) and 175,133 municipal fishing boats in the Municipal Fishing Vessel and Gear Registry (BoatR). These figures will serve as a baseline for the Government and LGUs in implementing regulatory measures and other mechanisms.



The completed community fish landing center in Sibuto, Tawi-Tawi provides fishers access to postharvest facilities and equipment to reduce postharvest losses

Finally, BFAR completed the formulation of the 2016 – 2020 Medium Term Comprehensive National Fisheries Industry Development Plan together with more than 500 representatives of fishery stakeholders.

National Organic Agriculture Program

The Philippines is among the active supporters of organic agriculture which was strengthened through the signing of the Organic Agriculture Act of 2010 or RA 10068 on 06 April 2010. The law paved the way for the creation of the National Organic Agriculture Board (NOAB) as the policy-making body responsible for providing direction and general guidelines for the implementation of the National Organic Agricultural Program (NOAP) 2012 – 2016. The NOAP was approved as a rolling program for organic agriculture in the country with these targets: the conversion of at least 5 percent or about 480,000 hectares of agricultural farm areas in the country to organic farming by 2016 and the promotion of organic food products to both local and international market.

To this end, the lead agency Bureau of Agriculture and Fisheries Standards (BAFS), in cooperation with RFOs and DA bureaus, provides various interventions for organic farmers to boost the country's organic agriculture industry. To improve the delivery of support services, two technical working groups (TWG), the national and regional TWG, were created in 2013 to evaluate and approve project proposals. In the same year, the DA and Department of Interior and Local Government (DILG) issued a Joint Memorandum Circular (JMC) No. 02, s. 2013, defining the roles and responsibilities of the LGUs in the implementation of the NOAP. The memorandum aims to encourage partnerships and alliances among various government agencies, leagues of provinces, cities and municipalities, and grassroots stakeholders in the adoption of the Act and to ensure that local initiatives are consistent with the NOAP.

From 2011 to 2015, the NOAP accomplished the following:

- Issued 24 registration certificates to various facilities, including 3 organic farms, 17 organic fertilizer and 4 bio-control agent producers
- Accredited two organic certifying bodies, the Organic Certification Center of the Philippines (OCCP) and the Negros Island Certification (NICERT). By 2015, these institutions had certified a total of 45 operators
- Provided subsidy to 86,911 organic agriculture practitioners applying for third-party certification from the accredited certifying bodies
- Established about 68 organic trading posts through RFOs in partnership with LGUs to intensify the promotion of fresh and processed organic products

In 2014, the NOAB approved and endorsed the declaration of the month of November as "Organic Agriculture Month." Annual Organic Agriculture Congresses were held and attended by various practitioners from all over the country.

By the end of 2015, the Philippines had around 151,740 hectares of organic farms, including land still in the process of being converted to certified organic. This makes up a total 1.5 percent of the country's agricultural land.



Through the NOAP, the PAYOGA/KAPATAGAN Multi-Purpose Cooperative of Gamu, Isabela expanded its native swine production and ventured into native chicken production. It was the first to launch organic native lechon and is now one of the biggest suppliers of native chicken in Cagayan Valley.

Learning and earning site entices Maribojoc folk to engage in farming

The rocky terrain of the municipality of Maribojoc in Bohol makes it unsuitable for agriculture. Most people have no choice but to seek employment in urban areas. "Engaging in agriculture in Maribojoc was simply impossible," says Raylan Jabonillo, Center Director of the Binhi Sa Panginabuhian Farm and Training Center. The miserable situation urged Mayor Leoncio Evasco Jr. to design an organic agriculture program that would entice people to engage in what seemed to be an unappealing endeavor.

Believing that planting crops and raising livestock were unprofitable, Joan Alimana, age 39, was one of the hardest to convince to join the program. Little did she know that she was in for a big surprise:

On the first cropping season of swine raising, Alimana had a return of investment (ROI) of 66 percent and the second cropping was even more promising with an ROI of 88 percent. Poultry raising gave her a brighter result with an ROI of 80 percent on the first year, which nearly doubled on the second year. Alimana was amazed at the fact that she was earning Php 25,000 for the 10 piglets she had raised on the first cropping.

Initially, the program targeted 70 beneficiaries who would participate in hands-on training on organic livestock production at the Center. The four-hectare facility showcases organic crop production including several kinds of forages, vermiculture beds, breeding areas for swine and chicken, goat and cattle sheds, a feed-mixing area, an incubation room with customized-design egg cabinets, and an organic vegetable garden. Here, beneficiaries are taught the cycle of livestock production, a unique feature of the program. To raise livestock, beneficiaries are taught the importance of having a forage area. In fact, all beneficiaries are required to plant vegetables in their homes as part of livestock production.



Attracting scores of farmers is the scheme of the program which started a year ago. A beneficiary who has a family is given 10 piglets while an individual is given 1 – 2 piglets. The livestock is fed and cared for at the facility, where every beneficiary learns to mix the right feeds based on the animal's age. Participants are also required to report once a week to the Center for a hands-on activity. They are even taught recordkeeping, including the costing of all locally-mixed feeds, as part of their training on running a farm as a real business. But the beauty of the program lies in the fact that beneficiaries are provided with inputs up to the third cropping, while all inputs of the succeeding cropping seasons are provided by the recipients themselves.

For constituents who live in remote areas, the local government is planning to set up laboratory areas right in the community. These will serve as training centers in the locality to enable beneficiaries to maximize the program.

To encourage youth engagement, barangays have decided on a strategy to include basketball players who can raise livestock, a creative move that has encouraged interest in agriculture among the younger members of the community, according to Jabonillo. With more constituents wanting to join the program, the LGU of Maribojoc hopes that sufficient funds will be available to meet the new demand.

Speaking of demand, market demand for "Mariboy and Marinok" (short for organic Maribojoc Baboy and Manok) is increasing, even beyond Maribojoc. Every week, around 500 pigs and close to 1,000 chickens are delivered to the local market. Given the success of the program, hundreds of farmers in Maribojoc have realized that agriculture is possible even profitable, in seemingly unfavorable conditions. It only takes a program where people learn and earn, and individuals like Joan Alimana who are willing to give it a try.

Functions Guiding Interventions

Cross-cutting functions of the DA guide the planning of interventions in the agn-fishery sector. These functions create an enabling environment for the sector to attain the twin goals of increased productivity and increased incomes

The choice is not between “functional” and “commodity” focus. All functions must deliver the appropriate interventions as required by each commodity



Inter-agency collaboration is important to the effective implementation of the Food Safety Act passed in 2013. Other implementing measures include the training of regulatory enforcers. Such efforts contribute to the capacity of local producers to export meat and poultry and other products

The following are major outputs under various functions and their corresponding impact.

	2011-2015	Impact
Infrastructure Development	<ul style="list-style-type: none"> 6,549 km of farm-to-market roads (FMRs) built and upgraded from 2011 to 2015 219,093 hectares generated and restored NIA-irrigation service area from 2011 to 2013 68,629 hectares of small-scale irrigation projects (SSIP) service areas generated and rehabilitated 93,261 farm machinery and 12,194 postharvest processing equipment distributed for rice and corn; 76 rice processing centers and 116 corn village type dryers built 31 major technology breakthroughs on farm mechanization and postharvest 	<ul style="list-style-type: none"> Reduced travel time and cost for better employment opportunities Expanded harvest area of rice, improved yield, and increased production Reduced cost of production in program areas Developed locally-adapted technologies
Regulatory Services	<ul style="list-style-type: none"> 6 agr laws passed 82 agn-fishery standards developed and issued Strengthened regulatory capabilities by beefing up manpower, automating import clearance issuance, and upgrading of laboratories and facilities 	<ul style="list-style-type: none"> Effect of laws will be carried out after 2016 Agn-fishery products meet international standards Better and more responsive implementation of regulatory functions
Credit, Insurance and Guarantee	<ul style="list-style-type: none"> Five new credit programs implemented; Php 8.6 billion loaned to 195,664 farmer-borrowers 1.196 million farmers and fishers covered by crop insurance in 2015 	<ul style="list-style-type: none"> Increased credit coverage encouraging production and thereby increasing income Provides relief to farmers from increasing risk due to weather-related production losses Encourages partner financial institutions and other lending entities to lend to small farmers and fishers
Market Development Services	<ul style="list-style-type: none"> 101 partner lending institutions provided guaranteed coverage; Php 235.71 million paid in claims 10 Agrikulturang Pilipino Trading Center established 62 municipal food terminals and 577 barangay food terminals established and operationalized 32 local and 24 international agribusiness investment fora and 27 enterprise development seminars conducted 	<ul style="list-style-type: none"> Reduced layer of middlemen; increased income of farmers Prepared market for farmers' products, provided affordable consumer goods Provided local agn-fishery products links to local and international market, developed new enterprises
Research and Development	<ul style="list-style-type: none"> 941 research projects undertaken for rice, corn, cassava, high value crops and organic agriculture 259 Community Based Participatory Action Research projects conducted benefitting 12,827 farmers and fishers 	<ul style="list-style-type: none"> Developed new technologies to support commodity programs Research effectively adopted by communities
Information and Extension	<ul style="list-style-type: none"> Farmers as partners in extension through local farmer technicians Farm Business School mainstreamed by the Agricultural Training Institute Use of the internet as extension mode through e-learning and e-farming 	<ul style="list-style-type: none"> Augmented extension personnel through farmers' partnership Developed farmers as entrepreneurs
Policy	<ul style="list-style-type: none"> Reactivated the DA-wide Clearinghouse System Promoted Public-Private Partnership Development Initiatives 	<ul style="list-style-type: none"> Created wider coverage and easy access to extension services Provided systematic evaluation of project proposals Strengthened partnership with the private sector towards agricultural development



Infrastructure Development

Focusing on investments in agri-fishery infrastructure was a major reform agenda during this Administration. Budget allocations were proposed and approved for irrigation, rehabilitation and construction, for FMRs, and for community fish landings—all of which form the foundation of a modernizing agriculture sector.

• Farm-to-Market Roads (FMRs)

Access is central to a modern agriculture sector. FMRs connect isolated areas to provincial and national road systems, ensuring mobility of residents, faster procurement of inputs, and lower cost of handling of produce. In March 2010, the AusAID Road Agenda on transport plan reported that 14,989 km of FMRs were yet to be developed in the country. Likewise in 2012, the Department of Public Works and Highways (DPWH) indicated that only 6.59 percent of barangay roads were paved.

The DA used to build all-weather roads that would disappear in a flood and appear in the following year's list of projects for rehabilitation. While it was cheaper to build this kind of road, the Cabinet resolved to build only concrete FMRs as early as July 2010. The DA's partner financing agencies initially objected due to the high cost of concrete roads but the DA pushed for the reform despite resistance. Under the new scheme, the DPWH standards of six meters wide, eight inches thick of concrete road at the standard cost of Php 10 million per kilometer were adopted.

From 2011 to 2015, the DA built and upgraded 6,549 km of roads connecting production areas to markets. These were funded under three main categories: the regular FMR development program, locally-funded projects, and foreign-assisted projects as summarized in Table 10.

The DA allocated Php 30.76 billion for the construction of FMRs under the Farm-to-Market Road Development Program (FMRDP). From 2011 to 2015 under the FMRDP, 3,395 km of FMRs were built, 2,920 km of which are concrete, climate-resilient FMRs. For 2016, Php 7.38 billion was allocated to the program to construct 737.72 km of concrete FMRs.

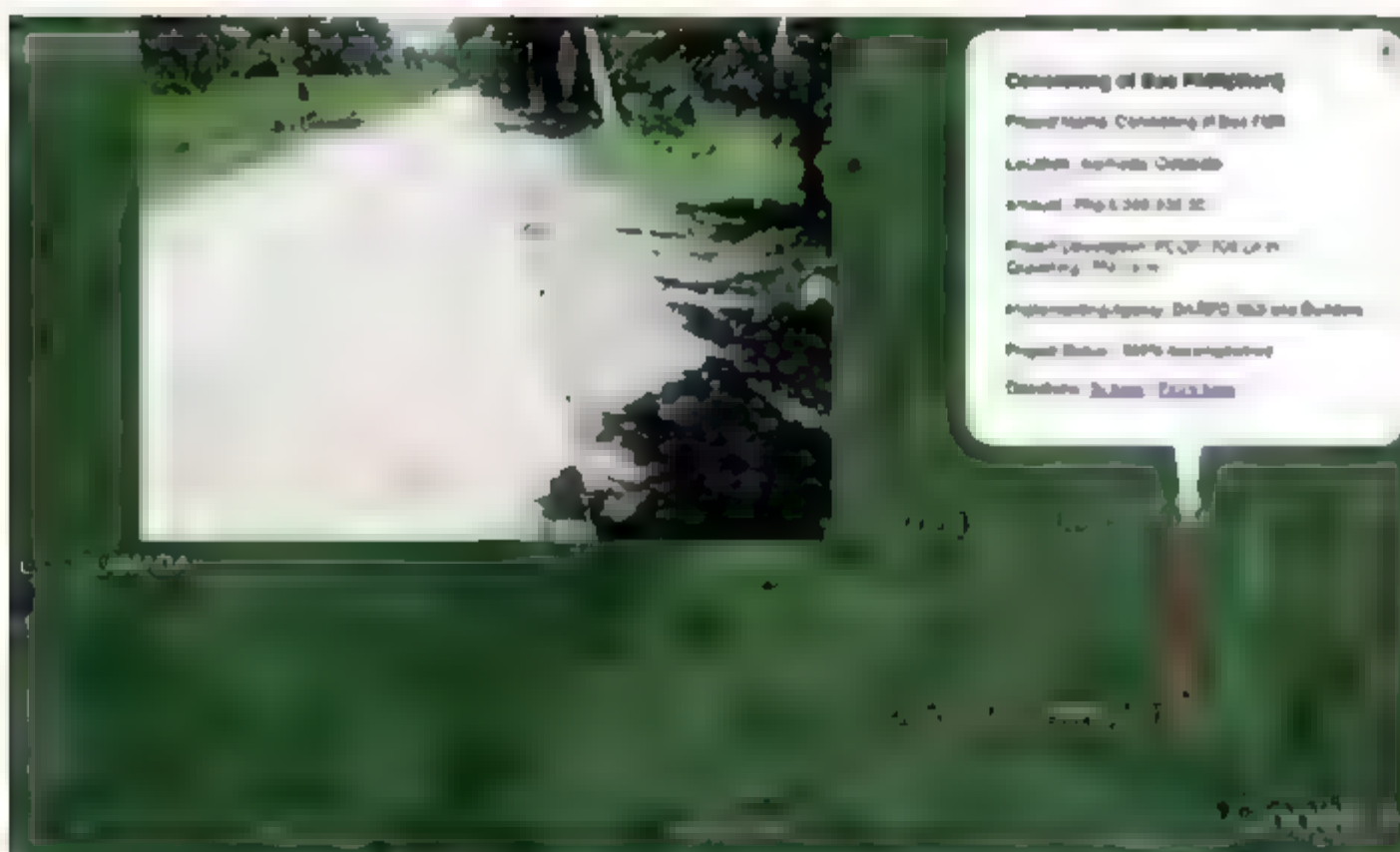
Projects, both locally-funded and foreign-assisted, implemented by the DA also included FMRs under infrastructure development. Some of these were already ongoing before this Administration; thus, not all FMRs were concrete. Locally-funded projects such as SOCCSKSARGEN, DiDP, CSMP, CIDP, ZIADP, MNCiADP, BUB and PAMANA constructed or rehabilitated 1,377 km of FMRs of which 1,263 km are concrete. Further, foreign-assisted projects such as InfRES, MRDP2, CHARMP2, and SELAP 2 constructed or rehabilitated a total of 1,770 km of which 612 km are concrete.*



Table 10. FMRs built and upgraded in kilometers, 2011 - 2015 (as of 31 December 2015)

Program/Project	2011	2012	2013	2014	2015	TOTAL
FMRDP	587.76	641.89	618.45	1,032.12	514.43	3,394.65
LFPs	59.03	52.24	542.00	679.70	44.44	1,377.41
SOCCSKSARGEN	4.05	7.81	7.95	26.47	2.19	48.47
DIDP	8.83	20.19	19.21	3.73	-	51.96
CSMP	9.68	8.37	14.82	6.57	4.02	43.46
CIDP	19.91	8.37	-	-	-	28.28
ZIADP	10.00	7.50	-	-	-	17.50
MNCIADP	6.56	-	-	-	-	6.56
BUB	-	-	421.20	544.75	-	965.95
PAMANA	-	-	78.82	98.18	38.23	215.23
FAPs	300.10	300.46	412.67	676.73	85.04	1,770.00
InfRES	184.63	63.28	12.77	-	-	260.68
MRDP 2	115.47	237.18	316.33	440.72	-	1,109.70
CHARMP 2	-	-	63.90	209.17	73.84	346.91
SELAP 2	-	-	18.46	28.84	11.20	59.71
TOTAL	946.89	994.59	1,573.12	2,390.55	643.91	6,549.06

*Note: DIDP – Davao Integrated Development Program, CSMP – Casuarina Social Measures Project, CIDP – Caraga Integrated Development Project, ZIADP – Zamboanga Peninsula and Basilan Province Integrated Agricultural Development Program, MNCIADP – Mindanao North Coast Integrated Area Development Project, BUB – Budgeting, PAMANA – Project of Managing Agricultural Resources, InfRES – Infrastructure for Rural Productivity Enhancement Sector, MRDP – Mindanao Rural Development Program, CHARMP – Cordillera Highland Agricultural Resource Management Project, SELAP – Support to Emergency and Livelihood Assistance Project



Sample geotagging map. The Geotagging tool enables remote monitoring of subprojects from identification to completion

The DA addressed the problem of duplications or overlaps and lack of connectivity to highways and markets with the innovative Google Earth-based geotagging tool. This project was introduced in 2011 for the Mindanao Rural Development Program (MRDP) to aid in project supervision. Geotagging applies global positioning system (GPS) technology to map out subprojects implemented by the program, enabling the local government, from barangay to provincial LGUs, to monitor the progress of implementation. This allows computer-based checking on road proposals and monitoring of construction until completion.

Geotagging, as developed and used by the DA, bested five other entries in the **Science of Delivery Awards of the World Bank Global Procurement for Complex Situation Challenge**. It is recognized by the World Bank as a Global Best Practice recommended for replication in other countries. In 2012, the DA also received the NEDA Good Practice Award for this innovation. The tool is now being used by other government agencies such as the Department of Environment and Natural Resources (DENR), the National Irrigation Administration (NIA), the Department of Social Welfare and Development (DSWD) and the DPWH. Commission on Audit (COA) personnel have been trained in geotagging and through an agreement between the COA and the DA, all FMRs will soon be audited using the geotagging tool.

The DA will hand over to the next administration an inventory of FMRs completed from 2010 to 2015, including geotagging files of each subproject.

For the future: There are some 10,000 kilometers more of FMRs to be built. LGUs with the seal of good governance and with geotagged road network proposals may be prioritized. With confidence gained in dealing with LGUs in constructing FMRs properly, we look forward to realizing, within the next administration, the dream of most farmers and fishers:

"Kung saan may magsasaka at mangingisda, may kalsada."



FMRs bring new life to Tanudan farming community



Tanudan is home to beautiful rice terraces where vegetables, rootcrops, and corn are intercropped with upland rice. Other mountain slopes are covered with coffee and banana while major crops include lobacco, legumes, and sugarcane. Its rivers abound with freshwater fish. Sadly, despite its rich resources, Tanudan is the most undeveloped among the eight towns of the Province of Kalinga.

Transporting produce from Tanudan in Kalinga to the major market in Tabuk City has been reduced from six hours through mountain trails to four hours on the newly built concrete road.

Agriculture is the source of livelihood for the people of Tanudan, with local farmers engaged in hog raising, cattle fattening, goat, poultry, and duck raising. But with only a single-lane rough road, one transport vehicle, and a six-hour hike through mountain trails, it was impossible for farmers to bring their produce to the market.

But this changed in September 2013 upon the construction of the 1.45-km Seet-Talocloc-Mangali FMR. Completed at the cost of Php 7 million, this FMR is connected to another 13.5-km stretch of road funded through a special project (CHARMP2) completed in May 2014 at the cost of Php 20 million. Three other FMRs project—Baccong-Buininan-Gumtara FMR, Bidoc-Gumtara-Mandamaan FMR and the Improvement of Magacarao-Gumbowoy-Liyang FMR were also funded by the DA through its Bottom-up Budgeting (BUB) program.

Today, the people of Tanudan enjoy the benefits of their new roads. Travel time has been reduced by as much as 1.5–2 hours with four public utility vehicles plying the route. But the biggest benefit to Tanudan farmers is their access to markets where they can easily transport their agricultural produce. Tabuk City, being the center of trade and commerce, is now only few hours away. Farmers are able to command a better price for their fresh produce. Even better, with improved accessibility, some traders go all the way to Tanudan to buy produce like bananas.

Another opportunity awaits Tanudan. Having the widest area for Robusta coffee with a total of 3,957 hectares or almost 50 percent of the total coffee area in the province, Tanudan will soon be a beneficiary of another FMR to be built under the Philippine Rural Development Project of the DA. The improvement of the 13-km stretch of Banneng-Gumbowoy FMR at a project cost of Php 118 million will boost the economic activities in the municipality. Bidding for the subproject has already been completed and the people of Tanudan are looking forward to its full implementation in the first quarter of 2016.

• Irrigation Services

From 2000 to 2010, the previous administration developed a combined net service area of 138 085 hectares for national and communal irrigation systems (based on PSA data)

Prior to its transfer to the Office of the President in May 2014, the National Irrigation Administration (NIA) under the DA's leadership delivered 219,093 hectares of new and restored irrigation service area from January 2011 to December 2013

On the other hand, the Bureau of Soil and Water Management (BSWM) constructed small-scale irrigation projects (SSIPs) covering 48,987 hectares of new area and 20,575 hectares of restored area (Table 11.)



Frontloading of investments in irrigation has resulted in significant expansion in area harvested and improvement in yield. From 2011 – 2013, the NIA under DA has generated and restored 219,093 hectares of irrigation service area



Table 11 Accomplished Small-Scale Irrigation Projects, 2010 – 2015

Intervention	Number of Projects	Service Area, hectares	
		Collected	Released
Small Water Impounding Project	201	6 048	6 112
Diversion Dam	410	10 173	10 814
Small Farm Reservoir	2 615	2 523	380
Spring Development	487	1 797	10
Canal Lining	79	2 854	2 461
Hydraulic Ram Pump / Solar Pump	159	637	
Pump Irrigation System for Open Source/			
Shallow Tube Well	8 539	24 736	773
Wind Pump	52	168	
Drip Irrigation	38	2	
Sinkier irrigation	1	0	
TOTAL	12,581	48,987	20,575

A system-by-system review covering 254 national irrigation systems and some 10,651 communal irrigation systems is an approach that has been proposed to address responsibilities on maintenance and specific issues such as deterioration, canal lining, and desilting.

Regulatory Services

• Revisiting Old and Enacting New Laws

The DA has been instrumental in the passage of the following laws which are vital in supporting the agriculture sector's development and progress.

Republic Act No. 10611 (New), also known as the "Food Safety Act," the "Act to Strengthen the Food Safety Regulatory System in the Country to Protect Consumer Health and Facilitate Market Access of Local Foods and Food Products, and for Other Purposes" was approved on 23 August 2013. On 20 February 2015, the DA and the Department of Health (DOH) signed the Implementing Rules and Regulation (IRR) of the said law that aims to ensure the safety of food from the farm to the dining table, through a strengthened food safety regulatory system. The IRR established a traceability system that tracks the source and destination of a commodity. All fresh produce or primary food obtained from primary production are under the DA's jurisdiction.

Republic Act No. 10654 (Amendment to RA 8550 or PH Fisheries Code of 1998), entitled "An Act to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing," lapsed into law on 27 February 2015. It intends to give teeth to the country's fishery code in implementation and to provide necessary measures to curb illegal, unreported, and unregulated (IUU) fishing activities. Some of its salient features include higher penalties and the mandatory creation of a vessel monitoring system for locating commercial fishing vessels. The IRR, signed on 22 September 2015, covers specific procedures on how to impose penalties on fishers who commit IUU fishing activities. It also lays down the guidelines on the enforcement of various fisheries conservation measures.



Republic Act No. 10536 (Amendment to RA 9296 or the Meat Inspection Code of the Philippines) was approved on 15 May 2013. In December 2014, the revised IRR was issued by the DA Secretary. The law introduced the term "hot meat" and enforced stricter penalties on violators. From administrative fines and mere confiscation of meat, RA 10536 now stipulates a jail term of 6 – 12 years or a fine of Php 100,000 to Php 1 million or both on persons convicted of selling or transporting hot meat.

Republic Act No. 10659 (New), also known as the Sugarcane Industry Development Act (SIDA) of 2015, "An Act Promoting and Supporting the Competitiveness of the Sugarcane Industry and for Other Purposes" was signed into law on 27 March 2015 and the IRR was signed on 4 August 2015. The law seeks to improve the country's sugar industry through the establishment of productivity improvement programs, provision of needed infrastructure support, and enhancement of the research and development of other products derived from sugar, sugarcane, and their by-products. It also seeks to provide human resource development, extension services and financial assistance to small farmers. The Government has allocated Php 2 billion annually for SIDA's implementation.

Republic Act No. 10623 (Amendment to RA 7581 or Price Act of 1992), "An Act Providing Protection to Consumers by Stabilizing the Prices of Basic Necessities and Prime Commodities and by Prescribing Measures Against Undue Price Increases During Emergency Situations and Like Occasions, and for Other Purposes," was approved on 6 September 2013. On 18 December 2013, the IRR was issued expanding the definition of basic commodities to include fresh fruits and the definition of prime commodities to include livestock and fishery feeds.

Republic Act No. 10601 (New), also known as the AFMech Law, "An Act Promoting Agricultural and Fisheries Mechanization Development in the Country", was signed into law on 05 June 2013 while the IRR was issued on 20 December 2013. The law mandates PhilMech to take the lead in the R&D of Mechanization in the country. The IRR paved the way for the creation of the Bureau of Agricultural and Fisheries Engineering (BAFE) tasked to formulate a five-year National Agri-Fishery Mechanization Program (NAFMP). The law aims to modernize the sector by increasing the level of mechanization, improving production efficiency, and promoting cost-efficient technologies in a sustainable way.

From four fishery law enforcers in 2010 to 580 trained personnel as professional fishery regulatory and law enforcement officers in 2015.





• Developing Philippine National Standards

From July 2010 to December 2015, a total of 82 standards for fresh, primary and secondary agri-fishery products were developed and issued by the Bureau of Agriculture and Fisheries Standards (BAFS). Several standards are still in various stages of development. These agri-fishery standards ensure the highest level of food safety and quality such as maximum (pesticide) residue limits for asparagus, okra, pineapple, mango, banana, and rice approved in 2015. In terms of the promotion of Philippine National Standards, major interventions involved Certification Programs for Good Agricultural Practice (GAP) and Good Animal Husbandry Practice (GAHP). Regional GAP teams were also established in the following regions: CAR, Ilocos Region, Cagayan Valley, Central Luzon, Calabarzon, Bicol Region, Northern Mindanao, SOCCSKSARGEN and Caraga. By 2015, 74 farms all over the country were GAP-certified (22 certifications renewed) and 8 farms were GAHP-certified (six certifications renewed).¹¹

• Strengthening Regulatory Capabilities

Strengthening the manpower of regulatory agencies. With the approval of the rationalization plan, the DA regulatory agencies, particularly the Bureau of Animal Industry (BAI), the Bureau of Fisheries and Aquatic Resources (BFAR), and the National Meat Inspection Service (NMIS) received the long-awaited boost in manpower to enforce existing and new laws.

BAI. The overall quarantine system of BAI was reinforced under EO No. 366 with the creation of the Veterinary Quarantine Division and through the re-nationalization of the different veterinary quarantine stations with 379 plantilla positions: 9 positions at the Central Veterinary Quarantine Office and 370 positions distributed in different Regional Quarantine Stations.

BFAR. In 2010, BFAR had only four fishery law enforcers guarding more than 2 million sq. km. of waters. Beginning 2014, BFAR started conducting a series of top-level 3-month live-in training courses for Fishery Law Enforcers and Regulators (with trainers from the PNP, the PMA and other institutions with technical experts). By 2015, BFAR had deployed 580 trained personnel as professional fishery regulatory and law enforcement officers.

NMIS. In accordance with Section 14 of RA 10536, only meat control officers, deputized meat control officers, and meat inspectors are allowed to conduct meat inspection services. From 2012 to 2015, NMIS had deputized 635 meat control officers and meat inspectors in the different regions of the country.

Online application for SPS Clearance. Beginning October 2010, the automated system for all Sanitary and Phytosanitary Standards Import Clearance (SPS IC) application was fully operationalized by BAI, BFAR and the Bureau of Plant Industry (BPI). The automation of the harmonized business processes of these agencies aims to enhance the delivery of services towards the adoption of best practices in the global trade. Under this scheme, importers may file their application of SPS IC electronically via InterCommerce Network Services (INS) which is open 24/7. Once filed, the concerned bureau automatically processes the application and the approved import permit is sent electronically to the importer.

Upgrading of laboratories and facilities. The DA undertook upgrading of laboratories and facilities to deliver quality services to agn-fishery stakeholders. From 2010 to 2014, laboratories numbering 51 were upgraded, including 14 bio-control laboratory plants, 4 integrated laboratories, 7 soils laboratories, 9 tissue laboratories, 8 crop protection laboratories, and 9 animal laboratories. BFAR also strengthened its existing 14 units of Monitoring, Control and Surveillance (MCS) patrol vessels to 113 units including, among others, the newly acquired 70 units of 30-footer multi-mission vessels and two units of 50-meter vessels that are currently under construction. The latter will be equipped with necessary special operations tools and devices such as service firearms, GPS, night vision goggles, scuba gear, and rigid-hulled inflatable rubber boats.

Enforcement effectively reduced fish kill occurrences

Losses from fish kill in Taal Lake was reduced from 2,619 metric tons in 2011 to only 162 metric tons in 2014. In terms of value, this translated to a decrease in losses from Php 236 million to Php 15 million. This development was the result of the dismantling of 1,093 illegally-constructed fish cages by the joint Task Force of the DENR, BFAR, PLGU and other partners.

The Taal Lake Unified Rules and Regulations on Fisheries allows only a maximum of 6,000 cages in the entire lake area. Vigilance, coupled with proper resource management measures resulted to better water quality, shortened production cycles from 4 – 5 months compared to 8 – 9 months in the past, and lower incidence of fish kills. Total fish cage production in 2014 reached 65,913 metric tons or an average annual production of about 11 metric tons per fish cage compared to only 9.3 metric tons per fish cage in 2011.





Credit, Insurance and Guarantee

• Credit

Accessible, affordable and timely credit is an important intervention in the shift away from subsidies for farm inputs. It is the instrument for promoting “farmers’ choice” through which farmers are afforded the capacity to choose reliable input suppliers, to procure inputs at the appropriate time, and to plan farm expenses.

The Agriculture and Fishery Modernization Act (AFMA) of 1997 mandates the National Government to appropriate 10 percent of the AFMA’s annual allocation equivalent to Php 2 billion worth of credit for agriculture and fisheries through the Agro-Industry Modernization Credit and Financing Program (AMCFP) in the first year of implementation of the law. Additional funding for the AMCFP should have been Php 1.7 billion per year over the next six years thereafter. This would have grown to an aggregate fund of Php 12.2 billion for agn-fishery credit by 2004. However, this did not materialize and the credit fund was derived only out of “leftover” funds from previously terminated credit programs.

In 2010, the DA Agricultural Credit and Policy Council (ACPC) which is in-charge of agn-credit programs only had one existing program, the Agn-Microfinance Program. Through this program, it extended loans amounting to Php 425.54 million to 21,440 farmer-borrowers in 2009 – 2010 via qualified borrower organizations. But a series of interventions have created far improved credit options for farmers, increasing their number from one in 2010 to six in 2015.

- In October 2011, the Cooperative Bank Agn-Lending Program (CBAP) was launched with an initial funding of Php 400 million.
- In January 2012, the credit component of the Food Staples Sufficiency Program (FSSP) Sikat Saka Program was launched with a seed fund of Php 400 million (Php 200 million from the DA and Php 200 million from the Land Bank of the Philippines).
- The Agrarian Production Credit Program (APCP), with an allocation of Php 1.5 billion, was started in October 2012 for agrarian reform beneficiaries.
- With the completion of the Registry System of Basic Sectors in Agriculture (RSBSA), the Agriculture and Fisheries Finance Program (AFFP) was started in December 2013 to provide loans to farmers and fishers registered in the said database. Initially, the program was allocated Php 1 billion but was expanded in 2015 with an additional Php 2 billion from the National Government.
- In July 2014, the Calamity Assistance Program (CAP) was launched with a seed fund of Php 100 million to respond to the needs of calamity-affected farmers and fishers.

Notably, the Sikat Saka Program was cited in the Mid-Term Assessment of the FSSP for its innovativeness: “The Sikat Saka Program broke new ground in providing credit access at low cost to individual farmers while meeting credit standards. By this means, individual farmers obtained a credit record which can eventually provide access to credit in commercial institutions. The low non-performing rate of 2 percent [as of end-2013] is unprecedented.” As of January 2016, the Sikat Saka Program continued to have the highest repayment rate at 92 percent after providing a cumulative loan of Php 2.62 billion to 10,566 small farmer borrowers.



The success of the Sikat Saka Program moved the Land Bank of the Philippines to propose a new lending program for fourth to sixth class municipalities in the country using the same model designed in 2012 with the DA. This lending program is proposed to have Php 1 billion in funding which will be channelled to eligible borrowers in 229 underserved municipalities.

Table 12 shows the description and the accomplishment of the above-mentioned programs.

Table 12. Accomplishment of credit programs, January 2011 to December 2015

Program	Brief Description/ Coverage	January to December 2015		Cumulative (January 2011 to December 2015)	
		Loans granted (Php million)	No. of borrowers	Loans granted (Php million)	No. of borrowers
Agri-Microfinance Program Start: September 2009	Provision of microfinancing for agri-fishery households through PCFC accredited MFIs	65.52	6,669	627.27	53,835
Cooperative Bank Agri-Lending Program Start: October 2011	Low-cost funding support to eligible cooperative banks lending to individual SFF, in the form of special time deposits at full credit risk. Production loans to small palay farmers through the IAs using LBP's deposit account and auto-debit services	314.63	3,901	2,836.55	58,976
Sikat Saka Program Start: January 2012	Joint credit program of the DA-DAR-LBP for Agrarian Reform Beneficiaries to support their individual or communal crop production projects, agri-enterprise and other livelihood projects	1,051.60	8,034	2,618.36	10,566
Agrarian Production Credit Program Start: October 2012	Production loans for eligible farmers and fishers identified in the RSBSA through LBP service conduits and MFI network of PCFC	987.28	29,151	1,905.06	48,838
Agriculture and Fisheries Financing Program Start: December 2013	Interest-free loans to existing SFF loan clients of FIs accredited under DA and ACPC Programs to finance agricultural production loans and income-generating activities to help them recover from the aftermath of a natural calamity	432.34	17,764	487.41	21,142
Calamity Assistance Program Start: July 2014		35.10	1,179	70.09	2,307
Total		2,886.47	86,698	8,602.74	195,664

Source: Agricultural Credit Policy Council





• Insurance

The relevance of agricultural insurance has grown significantly over the last few years as a result of the intensifying impacts of climate change and the occurrence of animal diseases and plant pests. In the 2011 – 2028 National Climate Change Adaptation Plan (NCCAP), the current Administration identified agricultural insurance as among its priorities. Greater risks among stakeholders and greater threat to food security require provision of greater protection to agri-fishery investments through broader crop insurance coverage.

In 2013, the Administration provided premium subsidy of Php 1 billion to the Philippine Crop Insurance Corporation (PCIC) and Php 2 billion each year in 2014 and 2015. With this support, the PCIC broke records with its notable accomplishments from 2011 to 2015. (Table 13.)

Table 13 PCIC Accomplishments, 2011 – 2015

	2011	2012	2013	2014	2015	Total
No. of farmers	190,568	311,388	743,589	917,814	1,196,144	3,359,503
Area covered, hectares	184,926	216,193	506,027	792,208	855,364	2,554,717
Rice	165,286	190,700	399,145	530,548	600,331	1,886,010
Corn	16,817	23,058	59,945	132,603	152,449	384,872
High-value crops	2,823	2,435	46,937	129,057	102,584	283,835
Amount of cover, Php millions	6 592 80	11 477 24	31 866 59	35 620 64	41 172 59	126 729 86
No. of claimants	51,383	31,865	67,532	87,855	130,224	368,859
Indemnity paid, Php millions	401.35	226.09	539.08	738.45	1,187.905	3,092.88

On the social protection aspect, the PCIC:

- provided insurance protection to a total of 3,359,503 farmers and fishers
- Insured rice, corn, and high-value crop farms, reaching 2.55 million hectares

On the financial aspect, the PCIC

- provided a total of Php 126.73 billion insurance coverage to farmers and fishers, Php 8.27 billion of which were provided to farmers and fisherfolk of Western Visayas, Central Visayas, and Eastern Visayas under the Yolanda Rehabilitation Program for 2014 – 2015
- provided Php 6.75 billion in premium subsidies to farmers and fishers with the support of the National Government
- paid out some Php 3.09 billion in insurance claims to 368,859 farmers and fishers

Other contributing factors to the operational outcomes were the PCIC's sustained partnership with LGUs, cooperatives, farmers' organizations, and various lending institutions, and the free agricultural insurance provided under the DA FSSP and Yolanda Rehabilitation Program.

On top of all these, for the first time in 34 years of existence, the PCIC remitted a total of Php 100.08 million worth of dividends to the National Government on 13 May 2015. This feat, unprecedented in the PCIC's corporate history, was a result of the good spread of risk in 2014 because of the Php 1.18 billion premium subsidy provided by the National Government for the insurance of subsistence for farmers and fishers listed in the RSBSA.



• Guarantee

The Agricultural Guarantee Fund Pool (AGFP) was established by virtue of Administrative Order (AO) No. 225-A issued by the President on 26 May 2008. The purpose of the Fund is to mitigate the risks of agricultural lending and promote financial inclusion of small farmers and fishers. An initial fund of Php 4.48 billion was allocated to the AGFP.

As of 31 December 2015, the AGFP provided guarantee coverage to partner lending institutions consisting of 53 banks, 41 cooperatives, and 7 farmer organizations and micro-finance institutions. The guarantee coverage aims to encourage partner financial institutions and other lending entities to grant unsecured agricultural food commodity production loans to small farmers and fishers. In return, the AGFP collected Php 41.53 million as guarantee fees. In sum, the AGFP paid claims of Php 235.71 million out of the guarantee coverage of Php 5.21 billion.

In 2016, the AGFP's target is to guarantee Php 6.5 billion of agricultural loans that will cover 151 partner lending institutions.

Farm and Postharvest Development and Mechanization

Tractors and other farm machinery and equipment are not new to the Philippines, but in the past few farmers could afford to buy them. Delivery of the machinery to the farmers was also a challenge when cash allocations were devolved to local governments. To fast track farm mechanization and postharvest development, the DA began the distribution of farm machinery and equipment through its programs and established postharvest facilities which are turned over to farmers' groups. Initially, a 50:50 counterparting scheme, in cash or in-kind, was created to assist farmers in purchasing the equipment. In 2011, the scheme was modified to 85:15 (85% for the DA, 15% for the farmers' group). This was further revised to 90:10 in 2015. (See Chapter 2 for the accomplishments by program.)

To guide farmers' decision and in line with the DA's principle of farmers' choice, annual **Makina Saka** or **Agri-Machinery Roadshows** have been conducted since 2011. These roadshows provide a venue for farmers and suppliers to interact and discuss machine specifications and actual cost of equipment. Further, some RFOs require suppliers who participate in biddings to perform demos of their machines for farmers. For example, in CAR, participants of public bidding conduct demo of their rice combine harvester in the presence of farmers. Local officials, some of whom are contributors to the farmers' counterpart funds, are invited as guests during the turnover of purchased equipment.

The country still imports most of its farm machinery needs especially heavy equipment. In 2013 alone, over 10 million units of agricultural machinery were imported. Not surprisingly, the design of some of these machines are not well-adapted to local conditions (e.g. small farm size), making mechanical breakdowns and non-optimal use of equipment common issues. In response, PhilMech developed several locally adaptable machinery not only for rice and corn but also for other high-value crops such as cassava, coffee, rubber, soybeans, and coconut. PhilMech focuses on R&D and invites the private sector to fabricate designs. Eventually, when equipment is turned over to farmers, suppliers are required to train beneficiaries to ensure the proper use and maintenance of these machines.





The corn mill developed by PhilMech has state-of-the-art features that make it more compact and efficient than existing corn mills. The machine can help increase the consumption of corn grits in far-flung areas where corn production is a major activity but no corn milling facility exists.

In 2013, the AFMech Law (RA 10601) was passed, promoting agricultural and fisheries development in the country. The law mandates PhilMech to take the lead in the research and development of mechanization in the country. The IRR paved the way for the creation of the Bureau of Agricultural and Fisheries Engineering (BAFE) to formulate a five-year National Agri-Fishery Mechanization Program (NAFMP).

Market Development Services

The Agrikulturang Pilipino Trading Center (APTC) project was proposed to address long-standing concerns such as unfavorable prices received by small farmers and fishers and high prices paid by food processors, market vendors, and end-consumers. Trading centers allow small farmers and fishers to deal directly with buyers, cutting down middlemen costs. APTCs are equipped with weighing scales and storage facilities, as well as price boards displaying current prices in major markets. Transport facilities are provided as well, while some have specific facilities for processing. Through the APTC Inter-Trading System, surplus products are brought to deficit areas, thereby stabilizing supply and prices.

As of April 2016, 10 out of the targeted 22 APTCs have been completed, namely:

- Camarines Norte APTC in Vinzons, Camarines Norte (Php 44.23 million). Launched in May 2014, the facility has served 753 vegetable and fruit farmers and 450 traders, generating a total sale of Php 13.94 million from vegetables and fruits from May 2014 to March 2016.
- Pangasinan APTC in Urdaneta City, Pangasinan (Php 29.27 million). This APTC serves as a trading hub for 400 farmers who deliver 70 to 100 metric tons of lowland vegetables daily. The facility started operations in July 2014.
- Quezon Corn Processing and Trading Center in Tayabas, Quezon (Php 28.19 million). The facility began operations in September 2014 and is being managed by the Isa Akong Magsasaka Foundation Inc. (IAMFI). From January to March 2016, the APTC has processed and sold 500 metric tons of corn.
- Isabela Multi-Commodity APTC in Roxas, Isabela (Php 121.30 million). Operational since December 2014, this APTC serves 346 vegetable farmers and livestock raisers and 63 traders. As of March 2016, a total of 875 metric tons in products have been traded in the APTC.
- Regional Organic Trading Center in Bagabag Nueva Vizcaya (Php 18.10 million). Launched in May 2015, it functions as a special trading facility for organic vegetables. As of December 2015, a total of 1,900 kg of farm produce have been delivered and traded by 18 farmers in this facility.
- NVAT Marketing System and Support Facilities Upgrading Project in Bambang, Nueva Vizcaya (Php 55.4 million). Completed in May 2015, the upgraded facility now includes a cutflowers retail store, an organic fruits and vegetables retail center, a wet market, an animal auction market, a windmill, a washing, sorting and packaging area, a storage facility, and a fruits and vegetables auction center.
- Dalaguete APTC in Cebu (Php 17.57 million). Launched in May 2015, this APTC serves 8,310 farmers transacting with 100 traders. About 70 metric tons of vegetables are traded here daily.
- Benguet APTC in La Trinidad, Benguet (Php 65.5 million). The biggest among the APTCs, the state-of-the-art Benguet APTC has so far provided services to 230 accredited individual farmers and 86 farmer groups who trade with 9 buyer groups. Once fully operational, the facility is expected to handle 900 to 1,500 metric tons of highland vegetables daily.



- Nueva Ecija APTC in Cabanatuan, Nueva Ecija (Php 77.62 million)
Completed in September 2015, this APTC will cater to around 1,500 vegetable farmers once it is in full operation. During a dry run held from September 2 – November 7, 2015, participating members of the Nueva Ecija Fruit and Vegetable Marketing Cooperative traded 50.64 metric tons of product.
- Siargao Island Multi-Commodity APTC in Dapa, Siargao Island, Surigao del Norte (Php 29.63 million). This facility had its soft launch in April 2016 and is currently having dry run operations. Once fully operational, the facility will benefit 413 farmers and 14 fisher-groups from 8 municipalities of Siargao Island.

In addition to APTCs, the Food Terminal Project of the past administration was strengthened through capability-building of food terminal operators. The project aims to lower the price of consumer goods while protecting the income of direct producers or farmers. From July 2010 to December 2013, a total of 62 municipal food terminals and 577 barangay food terminals were established benefitting 289,922 and 615,966 families, respectively.

In charge of international matters, Special Agriculture Representatives (SAR) are deployed in nine strategic countries (Belgium, China, Italy, Japan, South Korea, Switzerland, Thailand, United Arab Emirates and the US). They are tasked to explore market opportunities for agri-exports and identify areas of investments and technical cooperation.



The price board of Dalaguete APTC informs farmers about prevailing prices of their produce in Cebu City and other markets

Despite the uncertainties created by the Southwest Philippine Sea issue, Philippine agricultural exports to China have been robust since 2011, especially fruit exports such as banana, pineapple, mango, and papaya. In particular, the rejection of 891 containers of banana exports in 2012 due to pest infestation has made no dent as figures showed increasing exports from US\$ 85.28 million in 2011 to US\$ 91.88 million in 2012. This grew further to US\$ 148.00 billion in 2013 – 2014 as a result of the DA's efforts to address the issue. A similar positive trend is true for marine and aquaculture product exports which grew fourfold to US\$ 59.14 million in 2014 from US\$ 15.14 million in 2011.

As the thirteenth largest food importer in the world, South Korea is a lucrative market for Philippine agricultural products. Cognizant of this fact, the DA established a SAR office in South Korea in early January 2016 to explore opportunities of boosting Philippine agri-exports such as tropical fruits (banana, mango, and pineapple), organic high-value crops (asparagus and coffee) and poultry products (chicken and Pekin duck). Within four months of its opening, the office became fully operational after establishing contacts with key Korean government agencies and other organizations. The SAR office has laid the foundation for future bilateral agricultural trade, investments, and technical cooperation between our two countries.

Research and Development (R&D)



Carlito Aquino (shown above) deputized Magsasaka Siyentista and president of a farmers' organization, together with Gil Penrante, deputized local farmer technician (LFT) developed a mechanized weeder. A farmer can save as much as 50 percent from natural and manual weeding which costs around Php 1,260.50 to Php 2,500 per hectare when using the weeder. The technology was developed through a CPAR initiative.

R&D projects are funded under commodity programs and implemented or facilitated by the Bureau of Agricultural Research (BAR). From 2010 to 2015, research projects numbering 941 and amounting to Php 2.19 billion were conducted under Rice, Corn, HVCDP and Organic Agriculture Programs.

As one of the banner programs of the BAR, the Community-Based Participatory Action Research (CPAR) aims to enhance the role of R&D in the transfer of various technologies to farmers and fishers. CPAR is a location-specific research cum extension that deals with improved farming systems technologies for

specific micro agro-climatic environments in a province or municipality. It is considered downstream research focused on technology verification and adaptation and demonstration in the community. The first CPAR project was implemented in Tiaong, Quezon in 1998. Today, there are 259 CPAR projects being implemented nationwide, benefiting 12,827 farmers.

In February 2014, CPAR participants were able to interact at the 1st National CPAR Congress which was themed "Pagtutulungan ng mga Manananiksik, Magsasaka at Mangangisda sa Maiawakang Pag-Unlad ng Pamayanan." The congress was a venue for CPAR farmer cooperators and technology adopters to exchange information and technologies.

Meanwhile, the BAR pursued the commercialization of R&D outputs such as canned tuna in oil, French style bangus, organic Adlai and soybean, and beekeeping and garlic technologies.



Information and Extension

Extension, which involves transfer of new technologies to producers, is crucial in improving productivity in agriculture and fisheries. The devolution of agricultural extension to LGUs has challenged the DA's ability to effectively deliver extension services especially in remote areas. In reality, extension service is often neglected due to an LGU's limited budget. But in this digital age, the DA continues to seek opportunities to use new and old modes of extension, developing the following extension programs over the past five years:

- e-Learning (<http://e-extension.gov.ph/elearning/>). The e-Learning for Agriculture and Fisheries is an ATI online extension program that allows anyone to gain valuable information and be instantly educated by simply browsing the website. Fifty e-learning courses were developed and administered by the ATI covering the areas of rice, corn, high-value crops, livestock raising and organic agriculture, among others. From 2010 to 2015, e-learners numbering 23,519, including agricultural extension workers, OFWs, and SUC staff enrolled in the courses, with 18,031 successfully completing and receiving certificates of training.
- e-Farming. The Farmers' Contact Center serves as the e-farming component of the e-Extension Program. It is accessible through SMS, calls, email, shout box, instant messaging and internet forum. This interaction enables farmers and extension workers to easily address queries and suggestions regarding various agn-fishery technologies. The Center has received and answered a total of 66,079 queries from 2010 to 2015.
- Local farmer technicians (LFTs). Farmers are the DA's partners in agricultural development. Thus, farmers were tapped starting 2012 as extension intermediaries particularly in rice growing to augment the insufficient number of agricultural extension workers (AEWs) at the village level. Each LFT was equipped through training in comprehensive technology-based farming systems from land preparation to postharvest management with emphasis on integrated pest management. LFTs also serve as members of the Bantay Peste Brigade to monitor their area against potential infestation, as well as resource person in Usapang Palay, a community discussion on issues pertaining to rice production. Today, there are 1,897 LFTs all over the country.
- Farm business school. Through FAO-ATI partnership, the Farm Business School (FBS) approach of extension was introduced to the Philippines. As a key part of the Government's market-oriented extension scheme at the farm level, the program was initially implemented in Nueva Vizcaya and Nueva Ecija where 73 season-long FBS were established. Since then it has trained 13 ATI, AMAS and DAR personnel as its core team of trainers, 66 LGU extension workers and DAR development facilitators as FBS facilitators, 30 subject matter specialists, and a total of 1,767 farmers.
 - o The FBS established in pilot sites has resulted in additional marketing contracts and increased farmers' income. The success of the project prompted the ATI to adopt FBS as a regular program in 2014. The DAR also adopted it in 2015.

Policy

• DA-Wide Project Clearinghouse System

The DA-Wide Project Clearinghouse System was established in 1991 to organize the Department's project development activities and facilitate the identification, evaluation, selection, and prioritization of various agn-fishery development projects. It also facilitated the endorsement of proposals to the National Economic and Development Authority– Investment Coordination Committee (NEDA ICC)/Board and the various donor/official development assistance (ODA) agencies for approval and financing. However, due to management's policy decisions, the clearinghouse system became inactive in the latter part of the 1990s, and remained so despite the issuance of the DA Special Order (SO) No. 505 s. 2001, which would have effectively revived it.

Recognizing the importance of the system in enabling the DA to rationalize its project evaluation and selection, expedite project processing, and determine the best financing option, the clearinghouse system was finally re-activated in 2013 through DA Administrative Order (AO) No. 29 s. 2012. Regional counterparts were also activated.

Through a systematic procedure of preparation and evaluation of project proposals, the clearinghouse system has already evaluated 40 project proposals since 2013. Fourteen out of the 32 proposals presented were favorably endorsed to the NEDA ICC for evaluation. These projects include funded projects such as the Haryan Agricultural Reconstruction Programme and the FishCORAL project which were both supported by the International Fund for Agricultural Development (IFAD).

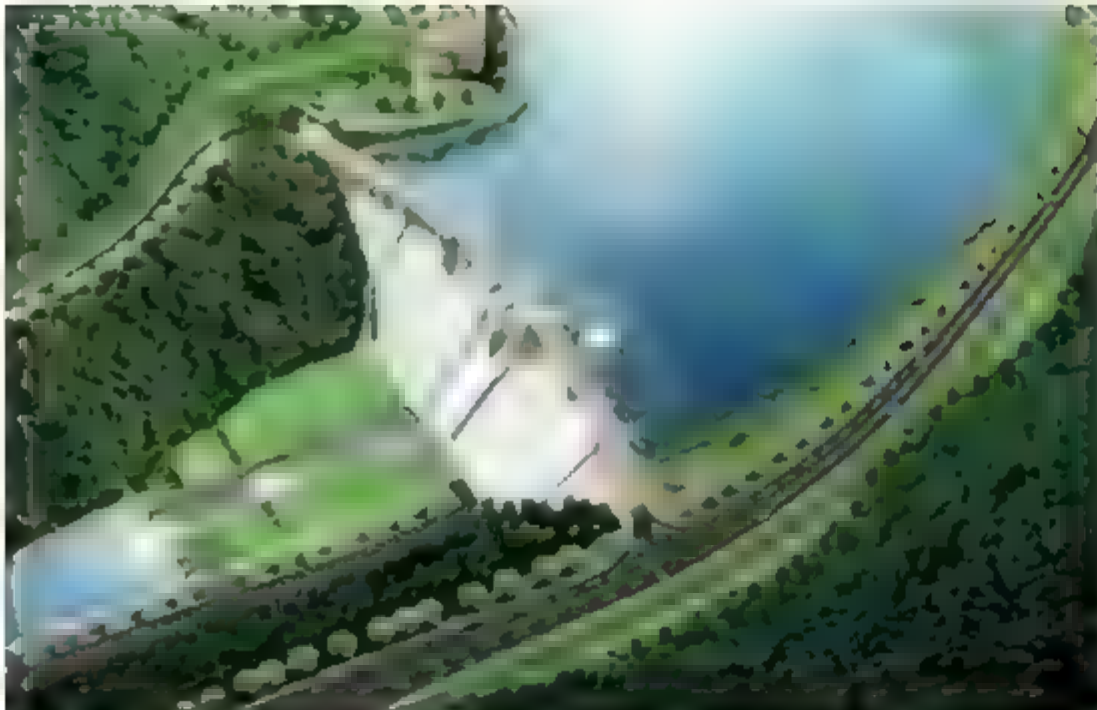
• Public-Private Partnership Development Initiatives

Public-Private Partnership or PPP is a contractual arrangement between the public and private sectors with clear agreement on shared objectives for the delivery of public infrastructure and public services by the private sector, that would otherwise have been provided through traditional public sector procurement. PPP projects are intended to accelerate the infrastructure development of the country and sustain economic growth.

In his 2010 State of the Nation Address, the President provided the policy direction on PPPs in agriculture: "If we can establish an efficient food supply chain with the help of the private sector, instead of importing our food requirements, we can now hope that we shall be able to export our produce to the world market."

In response, the Secretary issued DA Special Orders (SO) No. 604 s. 2010 and SO No. 506 s. 2011 creating the Interim PPP Coordination Office and the DA PPP Unit, respectively. The duties and responsibilities of the DA PPP Unit include spearheading PPP advocacies for the DA and relevant stakeholders, facilitating project preparation and development, assisting in the bidding process, handling contract management, and serving as administrators of a database on PPP-related documents.





The Php 11.2-billion JRMP II in Iloilo is a PPP project that will provide year-round irrigation to 22,340 hectares of existing irrigation service area and 9,500 hectares of new areas in 23 municipalities and cities of Iloilo and Passi.

Since its creation, the DA-PPP Unit has finalized and obtained the approval of the DA Secretary for the adoption of the "Guidelines in the Development of PPP Projects for the Department of Agriculture" as stated in AO No. 4 s. 2013. The guidelines lay out the requirements, eligibility, evaluation criteria, and the processes and procedures in developing and packaging proposals under a PPP scheme.

The DA-PPP Unit alongside the National Irrigation Administration (NIA) also facilitated the development of an Analytical Framework on PPPs in the Irrigation Sector funded under the World Bank's Public-Private Infrastructure Advisory Facility (PPIAF). The framework serves as a guide in identifying and structuring irrigation projects that would be best financed and implemented under a PPP scheme.

The Jalaur River Multipurpose Project Stage II (JRMP II) was packaged as a "hybrid PPP project" to be implemented in two phases. The first phase involves the construction of dam and irrigation facilities that will provide year-round irrigation to some 22,430 hectares of existing irrigation systems and 9,500 hectares of new irrigation area. The project is funded through an ODA under the Economic Development Cooperation Fund (EDCF) of the Korea EXIM Bank. The second phase will involve the generation of hydro-electric power and provision of domestic water supply for the locality, possibly through PPP structuring and financing.

RFOs as Frontline Implementers

Table 14. Summary of performance of agri-fishery sector by region, 2011 – 2014
(Ranked by contribution to national agri-GVA₁)

REGION	Share of Region's Agriculture	Share of Region's Fishery	Share of Region's Agri-Fishery	Share of Region's Agri-Fishery	Share of Region's Agri-Fishery
2011	2012	2013	2014	2015	2016
Central Luzon	14.8	6.12	0.86	17.2	21.1
CALABARZON	9.9	1.25	0.12	6.2	15.2
Western Visayas	9.1	1.77	0.15	24.5	38.2
Northern Mindanao	8.8	3.59	0.30	24.6	42.3
SOCOTSKSARGEN	7.4	3.51	0.26	29.2	49.5
Ilocos Region	7.2	3.06	0.22	24.8	36.0
Cagayan Valley	6.6	6.82	0.41	32.0	57.1
Davao Region	5.9	-1.33	-0.09	16.8	38.4
Bicol Region	4.6	3.68	0.16	24.7	39.0
Eastern Visayas	4.4	-6.07	-0.27	20.6	45.0
Zamboanga Peninsula	4.3	-2.48	-0.13	22.7	48.1
ARMM	4.3	-0.71	-0.03	61.3	69.5
Central Visayas	4.1	-0.06	0.00	6.9	30.1
MIMAROPA	3.9	0.08	0.00	24.6	49.4
Caraga	2.4	3.31	0.08	21.1	37.3
CAR	1.9	0.28	0.01	10.7	49.6
NCR	0.7	-2.49	-0.02	0.2	0.8
PHILIPPINES	100.0	2.02	2.02	10.8	32.0

Source of raw data: PSA

The DA Regional Field Offices (RFOs), in coordination with the bureaus and attached agencies, implement programs and projects together with different agri-fishery stakeholders. This section discusses the highlights of agri-sector performance of each region, staples performance and focus commodities including those that are being supported by the Philippine Rural Development Project's (PRDP) I-PLAN component.

Between 2011 and 2014, five regions contributed almost half the country's gross value added (GVA) in agriculture, fishery, and forestry: Central Luzon (14.8%), Calabarzon (9.9%), Western Visayas (9.1%), Northern Mindanao (8.6%) and SOCCSKSARGEN (7.4%). In terms of average annual growth rate, Cagayan Valley grew fastest at an average of 6.82 percent per year, followed by Central Luzon (6.12%), Bicol Region (3.68%), Northern Mindanao (3.59%) and SOCCKSARGEN (3.51%). In terms of share in growth of national agn-GVA, Central Luzon ranked highest (39%), followed by Cagayan Valley (20.30%), Northern Mindanao (13.64%), SOCCKSARGEN (11.82%), and Ilocos Region (10%). (See Table 14.)

While these regions managed to perform well, others reeled from the effects of natural calamities. Davao's banana industry, which accounts for about 40 percent of its agn-GVA, declined by an average of 1.33 percent per year as it suffered the effects of Typhoon Pablo. Eastern Visayas, the region hit hardest by Typhoon Yolanda, agn-GVA declined by an average of 6.07 percent per year. Zamboanga, whose fisheries contribute more than one-third of its agn-GVA, also suffered from declining productivity and decreased by 2 percent per year.

In the midst of these, agriculture remains the most important sector to some regions. In ARMM it accounted for 61.3 percent of the gross regional domestic product (GRDP) and provided employment to 69.5 percent of its labor force. Cagayan Valley's agn-sector contributed 32 percent to its GRDP and employed 57.1 percent of its labor force.

At the macro-economic level, regional performances are a mix of hits and misses. However, each has its own story to tell of reforms introduced, successful partnerships made with stakeholders, and achievements proudly made.

Cordillera Administrative Region (CAR)

A landlocked region, CAR's physiographic attributes make it the "Watershed Cradle in Northern Philippines." Its cool climate in the highlands is suitable for growing strawberries, Arabica coffee, traditional (heirloom) rice and temperate vegetables, while the lowland provinces are suited for intensive production of rice and corn. Overall, agriculture accounted for only 10.7 percent of the region's economy but provided employment to 49.6 percent of the region's labor force from 2011 to 2014.

The performance of the region's agriculture was largely affected by weather disturbances that regularly hit the country, from wet and dry spells to extreme frost. Typhoons and inclement weather conditions contributed to decrease in production. While the crops and fisheries (almost 90% tilapia) production managed to grow, the region's overall performance was affected by a sharp decline in livestock production, especially hog, from 2011 to 2014. This resulted in a minimal average annual growth rate of 0.28 percent from 2010 to 2014.

Regional palay production showed steady growth from 400,415 metric tons in 2011 to 460,170 metric tons in 2013. However, the positive performance was negated by a drop in production to 400,911 metric tons in 2015. The decline was due to Typhoon Ineng which destroyed a major irrigation system in Tabuk City, the rice granary of CAR. Corn (mainly yellow corn), on the other hand, grew an average of 7.2 percent per year from 172,195 metric tons in 2010 to 237,823 metric tons in 2015.

As the "Salad Bowl of the Philippines," Benguet supplies vegetables (e.g. potatoes, Baguio beans, peas, strawberries, cabbage, broccoli, cauliflower, lettuce, sayote, and carrots) to Metro Manila and nearby provinces. Benguet's produce was traded in the La Trinidad Vegetable Trading Post (LTVTP), but as production and volume of trade grew, the facility struggled to accommodate transactions, resulting in long queues of delivery trucks waiting for their turn to unload their vegetables. Consequently, the quality of vegetables deteriorated, leaving farmers no choice but to sell at very low prices.

The DA's solution was the construction of the Benguet Agri-Pinoy Trading Center (BAPTC). The BAPTC, which is intended to replace the existing trading post, is built on a four-hectare property and is the single biggest infrastructure investment in the region, amounting to Php 655.56 million. The project is covered by an agreement between the DA, farmer-producer groups, the Benguet State University, the city government of La Trinidad, the provincial government, and the lone district of Benguet. A huge upgrade from the LTVTP the facility includes a dry/cold storage warehouse and has three spot trading bays, each of which is larger than the entire LTVTP. Once fully operational, the trading center is expected to handle some 900 to 1,500 metric tons of vegetables daily, serving 230 accredited individual farmers, 86 farmer groups, and 9 buyer groups.

Focus Commodities

Aside from highland vegetables, CAR is also well-known for its coffee (Top 7 in Robusta and Top 5 in Arabica). In particular, coffee from Benguet, the Mountain Province, and Ifugao are recognized as some of the best Arabica coffee strains as these provinces have the high elevation required of this coffee variety. However, coffee production of the region has declined over the years due to aging trees, poor farm management, and limited financial capacity of farmers. Nevertheless, the coffee business thrives in CAR as indicated by the growing number of coffee processors in the region. In Kalinga alone, there are nine prominent processors. In 2016, prospects have never been brighter for Cordillera coffee as Finland's first Helsinki Coffee Festival has invited pioneering coffee processors to showcase Cordillera beans.



The province of Kalinga has 14 local brands of coffee that stand side by side with other brands in the country.

When the Philippine Rural Development Project (PRDP) commenced and identified coffee as CAR's pilot commodity, DA CAR and all CAR provinces immediately included coffee in the provincial commodity investment plans (PCIPs) which identifies key issues in production and value chain to further promote the growth of the industry. The project will be instrumental in providing the necessary infrastructure such as farm-to-market roads (FMRs) that will connect production areas to processors and markets, and will aid in the establishment of coffee-based enterprises.

In addition to coffee, the provincial local government units (PLGUs) identified the following commodities in their PCIPs.

- Abra: Mango
- Apayao: Banana
- Benguet, Ifugao, Kalinga and Mountain Province: Aromatic/Pigmented Rice (Heirloom Rice)

Ilocos Region

The agri-fishery sector in Ilocos Region showed remarkable performance with an average growth of 3.25 percent per year from 2011 to 2014, contributing 24.8 percent of the region's total output. Crops and fishing were the main growth drivers of the sector. Fishing (particularly bangus and tilapia) grew an average of 8.11 percent annually, the fastest among the regions.

The region is the fourth top producer of rice in the country. Average palay production in 2011 – 2015 at 1.73 million metric tons was higher by 10.5 percent compared to 1.57 million metric tons in 2006 – 2010. This has resulted to an improvement in sufficiency level from 169 percent in 2010 to 182 percent in 2014, allowing more surplus to be supplied to nearby regions.

Ilocos Region is also the fifth top producer of corn and has the best quality corn grain in the country. Corn production expanded rapidly at an average of 6.5 percent per year from 358,445 metric tons in 2010 to 490,943 metric tons in 2015 notwithstanding the El Niño phenomenon that did not spare Luzon in 2015. Corn sufficiency grew from 126 percent in 2010 to 188 percent in 2014.

Focus Commodities

In 2014, Ilocos Region was the top producer of the following commodities: milkfish, mango, goat, eggplant, tomato, tobacco, mungbean, peanut, and garlic.

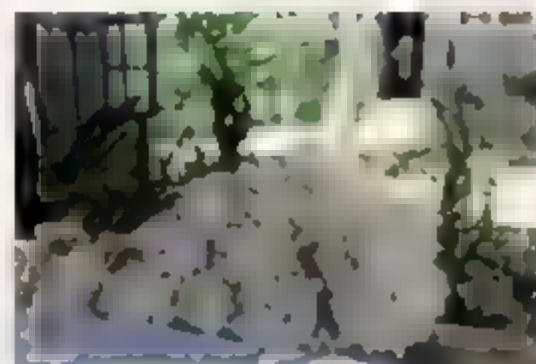
The Provincial LGUs have identified the following PCIPs.

- Ilocos Norte: Mango, Onion
- Ilocos Sur: Mango, Goat, Onion
- La Union: Mango, Goat, Peanut
- Pangasinan: Mango, Goat, Onion, Peanut

Cagayan Valley

Cagayan Valley takes pride in becoming the second highest rice producer in the country, moving from third in 2011 to replace Western Visayas. It is also the top producer of corn in the country. Being 127 percent sufficient in vegetables, it contributes about 8,000 metric tons of vegetables to Metro Manila yearly. These feats are a reflection of DA Cagayan Valley's transformation from "Marun to Green."¹² This initiative witnessed the complete re-engineering of the physical and spatial design of the agency—from dilapidated structures to state-of-the-art facilities and equipment in its two offices in Canga and San Gabriel in Tuguegarao, Cagayan and seven research centers/stations found within the region. With improved facilities and an enhanced workplace, better and faster services were extended to various clients and stakeholders of the DA.

DA Cagayan Valley was also top performer in financial management among DA RFOs. On 15 December 2015, Secretary Aicala issued a certification recognizing DA Cagayan Valley for consistently being number one in financial performance among all DA RFOs and attached bureaus. This achievement was made possible through the institutionalization of competency and professionalism in various levels of the organization, resulting to maximum performance and judicious spending.



Ilocos Region continues to be the lead producer of garlic in the country which has recorded continued growth under a free trade regime.

Focus Commodities

Aside from rice and corn, DA Cagayan Valley also supported the development of other commodities. The Quirino Provincial Government initiated support for the expansion of coffee production under its Q-Life Upland Ecosystem Project. Through this project, about 1.2 million coffee seedlings have been planted since 2010, an estimated 900,000 of which have survived.¹³ Further, coffee was selected by the province as one of its PCIPs.

Declared as "Peanut Capital of the Philippines," the town of Enrile in Cagayan ventured in area expansion. As a result, 800 hectares have been provided intervention by the DA. In Ilagan City, Isabela the corn industry became more vibrant with the declaration of the city as "Corn Capital," making it the primary source not only of corn raw products but also of quality finished products like feeds, processed foods, and canned goods. San Mateo, Isabela, the "Mungbean Capital," not only boosted its production of the commodity but also positioned itself as the first Agro-Ecological City in the North.

In addition, the following PCIPs were chosen by PLGUs:

- Batanes: Organic Garlic
- Cagayan: Dairy, Peanut
- Isabela: Dairy, Mungbean, Peanut, Mango
- Nueva Vizcaya: Mandarin Citrus, Onion
- Quirino: Coffee, Banana Chips



One of the results of DA Cagayan Valley's vision of transforming the region from "marun" to "green" – the newly established Research and Development Center building in the RFO's Nursery Compound in San Gabriel, Tuguegarao City



Central Luzon

From 2010 to 2015, the region maintained its status as the rice granary of the Philippines, with an average growth rate of 3.12 percent. In 2014, the historical best production of 3,765,150 metric tons was attained by the region, resulting to 154 percent sufficiency level and contributing 20 percent to national production. In 2015, the region remained the top producer of rice with the largest area harvested at 700,000 hectares and achieving the highest yield of 5.73 metric tons per hectare. The region supplies more than 1.2 million metric tons of rice annually to Metro Manila and nearby provinces.



Central Luzon:
top contributor to
agriculture
GVA – top rice producer,
hog, chicken, and onion

From 2010 to 2014, Central Luzon posted an average 4.86 percent gain in agricultural output. Aside from palay, the region was the top producer of onion, contributing 69.90 percent to the national production, chicken (36.27%), hog (18.73%), duck (43.65%) and duck eggs (33.73%), tiger prawn (49.58%) and tilapia (44.07%) in 2014.

Focus Commodities

While the region, particularly the province of Nueva Ecija, is known as the rice granary of the Philippines, it also supports other important commodities. Various PCIPs were approved by their respective provinces:

- Aurora: Coconut (copra), Banana
- Bataan: Sweet Potato, Mango, Sardines (dried tuyo)
- Bulacan: Ampalaya, Goat
- Nueva Ecija: Ampalaya, Onion, Aromatic and Pigmented Rice, Goat
- Pampanga: Cassava, Tilapia
- Tarlac: Sweet Potato, Aromatic and Pigmented Rice, Goat
- Zambales: Mango, Sweet Potato

CALABARZON

CALABARZON is an industrialized region that has benefitted over the years from the economic growth of Metro Manila. Its proximity to NCR has made it an alternative site for development and has provided a home for the working populace who serves as the primary market of the region's agricultural produce.

Agriculture in the region managed to increase at 2.62% per year from 2010 to 2013 fuelled by the growth of its livestock sector. This growth was interrupted in 2014 as calamities, particularly Typhoon Glenda, caused massive damage to coconut, fisheries and high-value crops, among others, leading to some Php 21.2 billion production losses. This was the biggest recorded production loss for the region in the last five years.

In terms of producing its staples, CALABARZON managed to maintain a rice sufficiency level of 16 – 17 percent in the past five years. On the other hand, corn production in the region increased considerably in 2013 – 2014 to more than 70,000 metric tons from 60,209 metric tons in 2010. DA CALABARZON also promoted the production of yellow corn to fulfill its demand for raw material in livestock and poultry feeds, while white corn was promoted in

remote areas of Quezon where it is consumed as a substitute for rice. With the establishment of Benacorn Corporation in Laguna, increase in production can be expected in the coming years. The establishment of the Quezon Corn Processing and Trading Center also opens opportunities to improve incomes of farmers in the major corn-producing province of the region.

Focus Commodities

Compensating for low staples production, CALABARZON's major agri-products are hog and chicken where it ranks second in the country. Chicken eggs, round scad, and tilapia complete its Top 5 commodities. Production of these high-value commodities makes CALABARZON the second top contributor to the national agricultural output.

At the Sentrong Pamilihan in Sanaya, Quezon, a handheld terminal prints out receipt showing the agreed price that the buyer will pay and the farmer will receive.



The following PCIPs were identified by their respective provinces:

- Batangas: Dairy Cattle
- Cavite: Coffee
- Laguna: Dairy Cattle, Coffee, Virgin Coconut Oil, Cacao
- Quezon: Coffee, Virgin Coconut Oil, Dairy Cattle



MIMAROPA

Tagged as the “Food Basket of Metro Manila and CALABARZON,” MIMAROPA is a major source of agricultural products such as palay, coconut, banana, calamansi, cassava, onion, and cashew. It is also abundant in marine products due to its rich fishing grounds such as Mogpog Pass, Tablas Strait, Mindoro Strait, Honda Bay, Cuyo Pass, and Maiampaya Ground.

Anchored on the Food Staples Sufficiency Program (FSSP), MIMAROPA has contributed almost six percent of the national rice production annually, maintaining its status as the seventh highest rice-producing region in the country. Aside from traditional surplus areas Oriental and Occidental Mindoro, Palawan regained its sufficiency status in 2012 and has maintained it through 2015. Corn, on the other hand, has recovered from declining production. It will be recalled that between 2005 to 2010, a decrease in areas harvested from 36,407 hectares to only 22,984 hectares caused corn production to decline from 94,161 metric tons to 67,712 metric tons. Beginning 2011, production grew steadily from 84,173 metric tons to 125,492 metric tons in 2015, a historical high for the region. Production growth was driven by the significant increase in yield from 2.95 metric per hectare in 2010 to 4 metric tons per hectare in 2015.

Focus Commodities

Oriental Mindoro produces about half of the calamansi output in the country, earning it the title “Calamansi King.” However, production has declined due to aging trees, poor farming practices, and rampant farm conversion (e.g. Victoria, which used to have 3,000 hectares of calamansi farms, now only has 884 hectares). Low prices during the peak season is among the top reasons why farmers replace their calamansi trees with rice or other fruit trees.

To revive production, the DA, through the PRDP, identified calamansi as Oriental Mindoro's PCIP. A 1.85-km stretch of FMR is currently being constructed through this initiative to link the barangays of Macatoc and Bagong Silang and a calamansi trading center and buying station.

MIMAROPA, second among producers of seaweed among the regions, is home to Palawan, which holds the distinction of being the top seaweed-producing province in the country. In 2014, Palawan contributed about 24.75 percent to national production. Along with Tawi-Tawi, the province dominates the export of dried seaweeds. According to the PCIP of Palawan, a potential area of 7,174 hectares can be added to the current 5,700 hectares for seaweed production. Further, the PCIP identified opportunities to improve the value chain that will greatly benefit seaweed farmers (e.g. creating an organization of farmers, setting up a financing mechanism, providing support to marketing, and establishing postharvest and processing facilities, among others).

The following PCIPs were identified by their respective provinces.

- Marinduque: Coconut (geonet), Arrowroot
- Occidental Mindoro: Onion, Cassava, Tuna
- Oriental Mindoro: Calamansi, Virgin Coconut Oil
- Palawan: Cashew, Seaweeds, Banana
- Romblon: Coconut, Fresh Mango



Geotagged map of identified interventions for calamansi production areas in Oriental Mindoro.

Bicol Region

Effective implementation of disaster preparedness and a quick response program allowed the agri-fishery sector of Bicol Region to grow at an average annual rate of 2.23 percent despite the 20 tropical storms that struck the region in the last five years. These responses included the strategic deployment of farm equipment such as mini combine-harvesters for immediate harvesting of harvestable palay in anticipation of typhoons, the continuous provision of farm inputs that are climate-tolerant and resilient high-yielding quality seed varieties, and the provision of insurance coverage to farmers. For high-value crops, DA Bicol distributed assorted vegetable seeds such as sitao and ampalaya which can easily be grown and converted into cash. Through these interventions, farmers were able to easily recover from losses.

Palay production in the region has grown 16.96 percent from 1.08 million metric tons in 2010 to 1.26 million metric tons in 2015. This growth can be attributed to the increased utilization of high-quality seeds, improved disaster preparedness, precision fertilization and improved research, development and extension system. Bicol Region also produced 243,908 metric tons of corn in 2015. Although this is lower than the previous year's record level production of 285,647 metric tons, overall, corn production from 2011 to 2015 was higher compared to the previously recorded highest production of 202,675 metric tons in 2008.

Focus Commodities

As the flagship commodity of the region, pili nut has helped sustain economic growth and improve the quality of life of Bicolanos. For the past decade, the region has developed a viable and competitive pili industry both for the local and export market and has strengthened and maintained its position as a major producer of pili products and by-products. The Philippine Statistics Authority (PSA) has reported that production performance of the commodity from 2010 to 2014 showed positive growth both in terms of volume of production and yield at an average growth rate of 8.8 percent and 9.2 percent, respectively. This performance can be attributed to farmers' adoption of the High-Value Crops Development Program's (HVCDP) three-year Pili Development Program (2009 – 2011) where each farmer cooperator was provided with grafted pili and fertilizer and supported through a series of trainings on production and processing technologies. HVCDP also engaged organized farmers and strengthened market linkages in both local and international markets.

Driven by a mutual goal to intensify the pili nut production in the region, the DA engaged J. Emmanuel Pastries – a Bicol-based multi-awarded entrepreneur and leading pili nut processor and exporter in November 2014.¹ A memorandum of agreement for pili contract growing expanded the company's 1.5 hectare pili plantation in Pacol, Naga City. Initially, the DA provided 10,000 grafted pili to 15 contract growers who each have about 10 hectares. To ensure the success of this undertaking, the DA strengthened collaboration with LGUs through trainings, farm lay-outing and provision of materials for intercropping, and production of organic fertilizer for pili plantation. Good Agricultural Practice (GAP) and adoption of standards prescribed by the Bureau of Agriculture and Fisheries Standards (BAFS) also resulted in improved and high quality products, making it competitive in both domestic and global markets.



The following PCIPs were identified by their respective provinces:

- Abay: Coconut (geonet), Sweet potato
- Camarines Norte: Coconut (geonet), Pineapple
- Camarines Sur: Coco Sugar, Seaweeds
- Catanduanes: Abaca, Mangrove Crab
- Masbate: Coconut Charcoal, Goat
- Sorsogon: Pili, Seaweeds



DA Bicol Region has partnered with a multi-awarded pili processor J. Emmanuel Pastnes in a pili production project that aims to boost the supply of pili in the region. Pili is an important economic growth driver of Bicol Region.

Western Visayas

The agri-fishery sector in Western Visayas accounted for 24.5 percent of its economy and employed 1.17 million people, the highest agri-employment among the regions. The sector recorded a 1.77 percent average annual growth rate from 2011 to 2014 led by the strong growth of its crops and poultry subsectors which compensated for the decline in its fisheries production.

As one of the major producers of rice in the country, the region recorded an average annual rice production of 2.15 million metric tons in 2011 - 2015, up 11.9 percent from 2.02 million metric tons in 2006 - 2010. The region ranked third among rice-producing regions. With 108 percent sufficiency, Western Visayas serves as a major supplier for rice-deficit provinces in the Visayas. To

further expand its potential for rice production, the completion of the Jajaur River Multi-Purpose Project Phase II (JRMP II) will provide year-round irrigation to 22,340 hectares of existing areas and 9,500 hectares of newly irrigated areas.

Meanwhile, corn production in the region grew at an average annual growth rate of 7.6 percent from 247,997 metric tons in 2010 to 350,391 metric tons in 2014. That same year, sufficiency level was at 142 percent for white corn and 124 percent for yellow corn.

Negros Occidental has been recognized as the leader in organic agriculture in the Philippines, pioneering the organization of organic farm communities and persuading city and municipal governments to pass local ordinances adapting organic farm practices. In 2015, the province took the lead yet again by hosting two of the biggest annual gatherings of organic farming advocates—the 12th National Organic Agriculture Congress and the 10th Negros Island Organic Farmers Festival. Further, the province converted 15,000 hectares of land to organic farming, exceeding its 10,000-hectare target for 2015.

Focus Commodities

The region maintained its rank as the top producer of sugarcane in 2014 with 14.52 million metric tons and an annual growth rate of 13.02 percent from 2010. Its banana and mango production ranked fifth and seventh, respectively, among the regions.

The following PCIPs were identified by their respective provinces:

- Antique: Muscovado
- Guimaras: Seaweeds
- Iloilo and Negros Occidental: Swine, Muscovado

Central Visayas

Like CALABARZON, Central Visayas has a more industrialized economy compared to other regions with GVA in agriculture accounting for only 6.9 percent of the GRDP. Still, agriculture remains vital as it employs more than 30 percent of the region's labor force. Currently, Central Visayas' major product is hog which accounted for 24 percent of the region's output from 2010 to 2014, followed by chicken (13.5%), palay at (8.1%), and chicken egg (6%).

As the fifth most populous region in the country, with 6.80 million people as of 2010, there is a concern about how to address the growing demand for food in Central Visayas. Efforts pursued to improve the sufficiency status of the region has led to increase in palay production to an average growth rate of 4.7 percent annually. From 270,449 metric tons in 2010, production rose to 336,194 metric tons in 2015, with Bohol accounting for almost three-fourth of production. These levels achieved in the past five years are the region's historical high, with production last peaking at 311,801 metric tons in 2008. In 2014, the region was able to register a 32.3 percent rice sufficiency level.

Corn, on the other hand, complements the region's staples supply, with the bulk of production contributed by white corn (98–99%). In fact, corn per capita consumption has increased significantly from 37.07 kg per year in 2008–2009 to 52.49 kg per year in 2012, more than five times the national average of 10.26 kg per year in 2012. Corn is consumed in some areas as substitute for rice. For the rest of its needs, the region relies on neighboring provinces for a stable supply of rice.



Farmers in the mountain barangays of Dalaguete, Cebu deliver vegetables to the trading center from where the produce is supplied to Cebu City and other adjacent localities.



Focus Commodities

Upland vegetable production in Dalaguete, Cebu is now served by the Php 17.2-million Dalaguete APTC (DAPTC). Inaugurated in 2015, the facility can accommodate 8,310 farmers and 100 traders. Prior to its establishment, only eight barangays of the municipality could supply to the existing trading center at an average of 40 metric tons a day. With the DAPTC, this volume has increased to 70 metric tons with the participation of the other eight barangays of the municipality.

The following PCIPs were identified by their respective provinces.

- Bohol and Cebu: Seaweeds
- Negros Oriental: Native Chicken
- Siquijor: Beef Cattle

Eastern Visayas

Many milestones mark the performance of DA Eastern Visayas over the past five years: the mainstreaming of the National Farm Registry System (NFRS) and the Inventory System for Agriculture and Fisheries Investment (ISAFI) to the Registry System of Basic Sectors in Agriculture (RSBSA); the phenomenal rise of Javier, Leyte as a municipal Convergence Model; and the alliance-building or multi-stakeholders partnership in Yolanda-rehabilitation activities.

DA Eastern Visayas has been at the forefront of reconstruction assistance after Typhoon Yolanda. In partnership with international NGOs, it delivered goods and services to farmers and fishers to help in their recovery. After Yolanda struck, cleaning debris from farms and irrigation facilities was carried out to give way to immediate replanting. Using the seed buffer stock and with help from international organizations such as the Food and Agriculture Organization (FAO) and the International Fund for Agricultural Development (IFAD), 53,168 hectares of palay were immediately replanted, producing 201,722 metric tons. A yield increase of 8.6 percent was noted as farmers who previously did not have access to quality seeds received certified seeds from the buffer stocks.

Apart from replanting efforts, within 90 days from March to May 2014, the DA also cleared 390,000 coconut trees by mobilizing skilled chainsaw workers from areas where the logging ban had been enforced (i.e. Cagayan, Quezon, and Caraga provinces).

The complementation of the conditional cash transfers or the Pantawid Pamilyang Pilipino Program (4Ps) and the RSBSA was demonstrated in this region through the collaboration of the DA and the Department of Social Welfare and Development (DSWD). Some 4,419 recipients of 4Ps in the province of Leyte were found to be families of farmers listed in the RSBSA. This qualified them as beneficiaries of interventions from the DA under various commodity programs designed to enhance the incomes of farm families. The successful cooperation led the DSWD to push for the expansion of RSBSA coverage in the entire region for full complementation of assistance and services.

Focus Commodities

Palay and coconut remain the major commodities of Eastern Visayas. The following PCIPs were also identified by their respective provinces:

- Eastern Samar, Northern Samar and Southern Leyte: Coconut (geonet)
- Leyte and Samar: Banana (Cardava)



The Ahan' project provided fishing boats to Typhoon Yolanda-stricken fishers of the Samar-Leyte regions.

Zamboanga Peninsula

Agriculture remains a significant sector in the Zamboanga Peninsula, accounting for 23.9 percent of the region's output and 48.1 percent of employment. Over the past five years, the sector's performance declined in 2011 and 2012 but showed positive growth in 2013 and 2014. The top three crops in the region are coconut, rubber, and banana which are planted in all its provinces. Chicken is the major poultry-raising activity, palay is the major temporary crop, while coconut is the dominant permanent crop.

In terms of food staples, rice production has increased considerably from 552,645 metric tons in 2010 to 661,775 metric tons in 2015. This has improved the sufficiency level of the region from 86.72 percent in 2010 to 96.65 percent in 2015. Corn production increased from 195,349 metric tons in 2010 to 220,180 metric tons in 2015, with almost 85 percent attributed to white corn. The PSA has reported an increase in annual per capita consumption of corn from 32.55 kg per year in 2008 – 2009 to 50.13 kg per year in 2012, showing corn's rising popularity as a rice substitute.

Focus Commodities

As the top producer of rubber in the country, the Zamboanga Peninsula benefitted from the establishment of the Rubber Testing Laboratory in the Zamboanga Peninsula Integrated Agricultural Research Center (ZAMPIARC) in Ipi, Zamboanga Sibugay. The laboratory conducts tests to ensure that the quality of rubber conforms to market standards.

The following PCIPs were identified by their respective provinces:

- Zamboanga del Norte: Rubber, Cacao, Coconut Fiber, Coconut, Mango
- Zamboanga del Sur: Cassava, Rubber, Banana (Cardava), Seaweeds
- Zamboanga Sibugay: Rubber, Seaweeds



The Zamboanga Peninsula Rubber Testing Laboratory conducts testing to ensure compliance with industry regulations and market requirements. It is strategically located near the rubber plantations of Ipi, Zamboanga Sibugay.



Northern Mindanao

The major commodities of Northern Mindanao consist of banana, pineapple, chicken, hog and corn—all of which account for over half of its agri-output. The region produces more than half of the country's pineapples and is second only to Davao Region in banana production. Both pineapple and banana belong to its Top 5 agri-exports.

Northern Mindanao's agri-sector remains vital to its economy, contributing almost one-fourth to its GRDP and employing more than 40 percent of its labor force. The sector grew an average of 3.77 percent per year from 2010 to 2014 as all subsectors registered positive growth. In particular, pineapple, hog, chicken, tiger prawn, and palay contributed almost 70 percent to the growth.

Through efforts to achieve sufficiency, a steady rise in palay production was recorded from 586,442 metric tons in 2010 to 725,120 metric tons in 2015, growing at an average of 4.3 percent per year. This has improved the region's sufficiency level from 70.44 percent in 2010 to 82.98 percent in 2015. On the other hand, the region ranked third in corn production, producing about 1.2 million metric tons per year from 2011 to 2015, of which white corn accounts for about one-third. White corn augments the region's staple supply while yellow corn serves as vital input in its robust livestock and poultry sector.

Among the top-performing research centers of the DA is the Northern Mindanao Agricultural Research Center (NOMIARC) in Malaybalay, Bukidnon which has been at the forefront of research efforts, one of which has earned it recognition as the White Potato Center of Mindanao. In 2014, the Center partnered with Nestlé Philippines, Inc. in expanding the existing 12.5-hectare Bukidnon Integrated Coffee Center and adding five more hectares for the establishment of a Robusta coffee nursery to provide excellent planting materials to coffee farmers.

Focus Commodities

While Northern Mindanao has established itself as a major player in the pineapple and banana industry, it sought to explore commodities with potential to contribute to the regional agricultural development. Under the PRDP, Northern Mindanao LGUs identified the following commodities in their PCIPs.

- Bukidnon: Rubber, Banana, Cacao, Cassava, Abaca
- Camiguin: Cardava Banana, Cassava
- Lanao del Norte: Cardava, Banana, Coconut (Fiber), Seaweeds
- Misamis Occidental: Cardava, Abaca, Cacao, Seaweeds, Rubber, Cassava
- Misamis Oriental: Banana, Cassava, Abaca, Cacao

Davao Region

Davao Region positions itself as a frontrunner in agri-exports. Currently, it is the major producer of top agri-exports: coconut (16% of national production) and banana (37.9%). The region's other exports have also successfully penetrated foreign markets, with durian being introduced to Singapore in 2013, China in 2015, and soon, Japan. Davao has also begun marketing Pekin duck to Japan and Middle East countries.



Malagos Chocolate, a Davao-based chocolate maker, marked another milestone in Philippine cacao as it won a silver award in the Drinking Chocolate Category for the Academy of Chocolate 2016 Awards held in London, United Kingdom.

Photo credit: Malagos Chocolate website

Being the major producer of cacao in the country, Davao Region is considered the country's "cacao capital," a title that became the theme of the Regional Cacao Congress held in July 2015. As such, it functions as the trading and consolidation hub for Mindanao's cacao exports: tablea, chocolate powder and artisanal chocolate, products which are brought to major export destinations such as Malaysia and Thailand.

To expand its production base, DA Davao Region distributed more than 775,000 seedlings on top of those provided by the Department of Agrarian Reform (DAR), the Department of Environment and Natural Resources (DENR), and the Philippine Coconut Authority (PCA). These were planted in some 1,550 hectares regionwide. Aside from expanding production, the DA provided cacao processing centers to assist more than 90 groups of farmers to ensure that they will benefit from export ventures. Further, the PRDP identified cacao as a pilot commodity of the region and recently approved a Php 26-million cacao enterprise project called **Cacao Production and Marketing of Dry-Fermented Beans of Davao City**. It also approved Php 432-million worth of infrastructure subprojects.

In terms of staples, Davao Region was able to arrest its declining palay production which dropped from 476,411 metric tons in 2006 to 402,811 metric tons in 2010 due to contraction in areas harvested from 108,992 hectares to 95,901 hectares. Beginning 2010, rice production began to recover at an average of 2 percent, amounting to 441,868 metric tons in 2015. This resulted in an improvement in the region's sufficiency level from 45.7 percent in 2010 to 48.7 percent in 2015. This was due mainly to the improvement in yield from 4.20 metric tons per hectare in 2010 to 4.45 metric tons per hectare in 2015. On the other hand, the region's corn production has been increasing by an annual average of 3.45 percent, from 202,354 metric tons in 2010 to 224,100 metric tons in 2015, equivalent to 131.24 percent sufficiency.

Focus Commodities

The following PCIPs were also identified by their respective provinces:

- Compostela Valley: Rubber, Banana, Cacao, Cassava, Abaca, Seaweeds
- Davao del Norte: Abaca, Banana, Cacao, Cassava, Rubber, Seaweeds, Mango, Coffee, Coconut (Fiber)
- Davao del Sur: Rubber, Banana, Cacao, Cassava, Abaca, Seaweeds
- Davao Oriental: Banana, Cacao, Abaca



SOCCSKSARGEN

Public accountability and total transparency have brought tremendous transformation to DA SOCCSKSARGEN in terms of governance. The RFO's relationship with the LGUs and the region's farmers and fishers improved through good management practices and innovations introduced by the new leadership. As a result, SOCCSKSARGEN saw continuous growth of the agriculture sector at an average of 3.77 percent per year from 2010 to 2014.

In 2011, the DA SOCCSKSARGEN held the first ever Ulat sa Bayan, an information caravan on the DA's programs, projects, and activities. It was highlighted by the mass distribution of farm equipment and agri-based projects and a raffle of interventions. The years that followed featured 62 mini-quarterly caravans with at least 300 participants each and 25 annual grand Ulat sa Bayan events attended by about 5,000 participants held in the different provinces of the region. Among the attendees were farmers, fishers, and LGU heads and their representatives. During these activities, farmers' issues and concerns were immediately addressed, thus realizing the DA's slogan of "bridging the gap, touching the hearts." Farmers were happy to bring home farm machinery and other farm inputs.

Another unique management strategy institutionalized by the RFO is the presentation of programs and projects to local chief executives (LCEs), congressional representatives, and members of the Sangguniang Panlalawigan of the region to garner the LGU's support for various agricultural endeavors of the Department. These LCEs and legislators showed their appreciation of these initiatives and passed resolutions endorsing various DA projects with counterparts from their respective LGUs. In one such event, North Cotabato Governor Emmylou Talino Mendoza shared how the provincial government allocated more than Php 200 million as counterpart funding for various agri-based projects.

One of the tangible results of these initiatives is the rapid growth in palay production in the region in support of the FSSP. From 1.19 million metric tons in 2010, palay production grew to 1.36 million metric tons in 2014 at an average of 3.61 percent per year. The strong production exceeded population growth, and with the reduction in per capita consumption from 136.5 kg to 125.5 kg, the region enjoyed a surplus of over 200,000 metric tons of milled rice. Corn production, likewise, followed the same trend, growing 3.28 percent per year from 1.06 million metric tons in 2010 to 1.24 million metric tons in 2015.

Focus Commodities

With cassava gaining acceptance as an ingredient for livestock and poultry feeds, cassava production in SOCCSKSARGEN has more than tripled from 34,556 metric tons in 2010 to 121,823 metric tons in 2014. The increase was mainly driven by the expansion of areas in major producer South Cotabato from 735 hectares in 2010 to 3,090 hectares in 2014.

The PRDP identified cassava as the pilot commodity of the region. It also approved the project **Production and Marketing of Cassava Granules in South Cotabato** that involves a partnership between the DA, the LGU and the Polo Samahang Nayan Multi-Purpose Cooperative (POLOSAN MPC). The POLOSAN MPC provides the market for the crops of farmers who received



Farmers and farmer groups directly receive the farm machinery and equipment that they have been qualified to obtain at public turnover events witnessed by fellow farmers, LGU officials and other stakeholders. Farm mechanization is one of the interventions to improve competitiveness.

financial assistance and were provided with inputs and planting materials at a competitive price. Together with Topland MPC, San Jose MPC, Self-Reliant MPC and Poblacion Buto San Isidro Lampitak Agrarian Reform Beneficiary MPC, the POLOSIN MPC will process and sell cassava granules to commercial feedmills in the province such as San Miguel Foods and Agri Min.

DA SOCCSKSARGEN also extended assistance to high-value crops farmers in exporting their produce. The pilot exportation activities of rice in 2013 has given North Cotabato-based Don Bosco MPC a spot in the world market in Dubai, Hongkong, Germany, and the Netherlands in 2013 and the United States in 2015. On the other hand, at least 360 metric tons of papaya was regularly shipped to Singapore from November 2013 to June 2015. Before the end of 2015, the RFO also facilitated the export of 2.5 metric tons of carabao mango and 1.5 metric tons of fresh calamansi to Dubai, UAE. Capitalizing on existing and potential expansion of production, the PLGUs identified the following PCIPs to be supported under the PRDP

- North Cotabato: Rubber
- Sarangani: Coconut (VCO), Abaca
- South Cotabato: Cacao, Cassava, Coffee, Mango
- Sultan Kudarat: Coffee

Caraga



Caraga produces around 6,000 metric tons of abaca fiber yearly, ranking fourth among the regions, allowing it to supply abaca as raw material to processors in Cagayan de Oro, Davao and Bicol Region.

Formerly the country's "poorest region" in 2006 and 2009, Caraga has consistently been in the Top 5 fastest-growing economies in the country for the past five years. The region's economy grew significantly at rates higher than that of the national average. Based on a PSA report, it placed sixth among 17 regions in 2012, moving two notches higher to fourth place in 2013 and 2014

Palay production in Caraga had been declining from 2007 at 455,838 metric tons to 2010 at 405,871 metric tons. The FSSP arrested this decline in 2011 and has since recorded a 24.43 percent increase between 2012 and 2013 from 469,206 metric tons to 583,838 metric tons. The growth was driven by the strong growth in yield in rainfed farms. The region registered an average of 95 percent sufficiency level from 2005 to 2009 which rose to 98 percent in the 2010 – 2014 period. Surpluses were generated in 2007, 2013, and 2014

Total corn area in the region accounts for 27,744 hectares, wherein 20,030 hectares is devoted to white corn and 7,714 hectares is planted with yellow corn. Agusan del Sur occupies 57 percent of the area. Corn production in the region showed an increasing trend over the last four years although it registered a slight decline in 2015. Nevertheless, average corn production from 2011 to 2015 at 103,372 metric tons is 4.3 percent higher than the 99,110 metric tons average from 2006 to 2010.

Focus Commodities

Aside from rice and corn, the region focuses on plantation crops such as abaca, cacao, coconut, coffee, oil palm, rubber, banana and fishery products (bangus, tilapia and seaweeds).

Under the PRDP, the pilot commodity of Caraga is abaca. Caraga produces around 6,000 metric tons of abaca fiber yearly, ranking fourth among the regions. It has been supplying abaca as raw material for pulp production, specialty papermaking, cordage production and handicrafts to Cagayan de Oro, Davao, and Bicol Region



There are more than 3,000 abaca producers in the region with farm holdings averaging 1 to 3.5 hectares. A total of 44 licensed abaca traders and 4 fiber craftmakers are operating in the region. The industry generates over 27,000 jobs whose direct dependents include abaca farmers, classifiers or sorters, manufacturers, traders, exporters and hundreds of fiber craft processors. Market potential for exports (e.g. growing demand in Europe, Japan and the US for denim production) and the vast area for expansion makes abaca an attractive commodity for investment in the region.

As the pilot enterprise project, the business plan of the Php 16.22-million Abaca Fiber Production and Trading Enhancement of San Isidro Upland Farmers MPC in Agusan del Norte has already been approved.

The following PCIPs were also identified by their respective provinces.

- Agusan del Norte: Abaca, Cardava Banana
- Agusan del Sur: Rubber, Cacao, Cassava, Abaca, Banana
- Dinagat Island: Cassava, Seaweed, Banana, Cacao
- Sungao del Norte: Cacao, Seaweed, Cassava, Cardava Banana, Coconut (fiber)
- Sungao del Sur: Coconut, Abaca

Autonomous Region of Muslim Mindanao (ARMM)

As an autonomous region, ARMM has its own Department of Agriculture and Fisheries. Despite this, the National Government assists the development of its agn-sector with the help of its RFOs: DA Zamboanga for Basilan, Tawi-Tawi, and Sulu; DA SOCCSKSARGEN for Maguindanao; and DA Northern Mindanao for Lanao del Sur. Budgets and programs for ARMM provinces are channeled through these regional offices.

Amidst issues of peace and order, the government aims to entice armed rebels to engage in agriculture through its From Arms to Farms project of the Agricultural Training Institute (ATI). In Barangay Balas in Lamitan, Basilan, this initiative came in the form of ARMMSarap Project, a partnership between the ARMM Government, ACES Polytechnic College, Anak Mindanao Partylist, and Earthsoul Solutions. Through the project, the ATI was able to provide "lifelihood" (life and livelihood) to the marginalized fish farmers in Mindanao through organic agriculture and aquaculture.

A total of 54 participants were selected to train in producing organic aquaculture feeds, raising organic bangus and other species in fish cages and processing organic fishery in bottles. They were also trained in organic agriculture production of lettuce and native chicken. A Halal-compliant processing plant and feed mill was provided to the barangay as well as a dormitory and training hall.

Focus Commodities

The following PCIPs were also identified by their respective provinces:

- Basilan: Rubber
- Lanao del Sur: Banana, Cassava, Abaca, Cacao, Coffee, Coconut (fiber)
- Maguindanao: Coconut, Coffee
- Sulu: Abaca, Cassava, Seaweeds, Coffee
- Tawi-Tawi: Seaweeds, Cassava



The ARMMSarap Project of ATI in Balas, Lamitan City, Basilan not only trained residents on organic farming but also set up a Halal-compliant aquaculture processing facility to add value to their produce. Among the products that are being manufactured are Organic Bangus in Corn, Franks, Organic Pork Humba and Boneless, Mannated Organic Red Tilapia.

Support Services from Bureaus, Attached Agencies and Corporations

Office Bureaus	Highlights
ATI	<ul style="list-style-type: none"> Led the provision of extension support services including the preparation of information and education materials and the conduct of Farmers' Field Schools and other training courses (see Information and Extension in Chapter 3)
BAFS	<ul style="list-style-type: none"> Developed and issued 82 agri-fishery standards Oversaw 39 GAP certifications and 5 GAMP certification of farms (see Philippine National Standards in Chapter 3) Served as lead implementer of NOAP (see National Organic Agriculture Program in Chapter 2)
BAI	<ul style="list-style-type: none"> Supported the development of livestock and poultry sectors by: <ul style="list-style-type: none"> Protecting the sectors from animal diseases (including FMD, AI and PPR) through reinforced quarantine system Implementing the Animal Welfare Act Pursuing a rabies-free Philippines in partnership with the DOH Initiated the Philippine Native Animal Development Program
BAR	<ul style="list-style-type: none"> Undertook and oversaw all research projects of the DA (see Research and Development in Chapter 3)
BPI	<ul style="list-style-type: none"> Supported the development of crops industry through enforcement of quarantine on agricultural crops that enter the country and provision of technical support for various crops development
BSWM	<ul style="list-style-type: none"> Developed vulnerability Mapping for PRDP Launched Agromet cum Climate Change website and BSWM MAP portal Undertook development of small scale irrigation projects (see Irrigation Network Services in Chapter 3)
Attached agencies	
ACPC	<ul style="list-style-type: none"> Expanded credit programs to cater to different needs of agri-fishery stakeholders (see Credit Functional Highlights)
BFAR	<ul style="list-style-type: none"> Supported the development of fisheries sector through the National Fisheries Program (see National Fisheries Program in Chapter 2) Conserved marine resources through regulatory measures (see Regulatory Services in Chapter 3)
NMIS	<ul style="list-style-type: none"> Undertook Meat Establishment Improvement Program Implemented the National Abattoir Development Project under the National Livestock Program (see National Livestock Program in Chapter 2) Ensured meat safety in the country (see Regulatory Services in Chapter 3) Led the country's fight against anti-microbial resistance
PCAF	<ul style="list-style-type: none"> Provided valuable inputs to the IRR of Food Safety Act and Price Act Acted as the DA's consultative body in policy matters Facilitated Japan 2KR and US PL 480 projects
PCC	<ul style="list-style-type: none"> Supported the development of carabao sector through <ul style="list-style-type: none"> Carabao-based enterprise development program Dairy Buffalo Multiplier Farm Program

Office Streams	Highlights
PhilMech	<ul style="list-style-type: none"> • Spearheaded the Agri-Machinery Roadshows or Makina Saka • Designed and developed new mechanization and postharvest technologies • Made innovation on existing technologies through AgriInnovation
PhilFIDA	<ul style="list-style-type: none"> • Supported the development of the fiber crops (particularly abaca) industry through: <ul style="list-style-type: none"> ◊ Production and distribution of abaca planting materials ◊ Expansion in new areas and rehabilitation of existing areas ◊ Establishment of postharvest facilities for abaca ◊ Conduct of farmers' training ◊ Regulates activities of the fiber industry
Attached Corporations	
NDA	<ul style="list-style-type: none"> • Supported the development of the dairy sector by: <ul style="list-style-type: none"> ◊ Establishing 80 dairy multiplier farms ◊ Addressing malnutrition through Milk Feeding Program benefitting more than 270,000 children from 2011 – 2015
NFA*	<ul style="list-style-type: none"> • Introduced reforms to improve the agency's quality of services • Shifted its stance on food security and initiated operational reforms that led to a reduction in NFA's outstanding debts
NIA*	<ul style="list-style-type: none"> • Generated and restored 219,003 hectares of irrigation service area from 2011 to 2013 • Introduced reforms to improve agency's effectiveness
NTA	<ul style="list-style-type: none"> • Supported the development of the tobacco farmers through: <ul style="list-style-type: none"> ◊ Market-oriented production assistance through Tobacco Growing System ◊ Income-augmenting activities through rice growing and livestock raising ◊ Establishment of Processing and Trading Center for tobacco farmers' products other than tobacco
PCA*	<ul style="list-style-type: none"> • Planted 34.7 million coconut seedlings and distributed 1.65 million bags of fertilizer for coconut from 2011 to 2013 • Established 527 KAANIB sites
PCIC	<ul style="list-style-type: none"> • Provided crop insurance to 1.20 million agri-fishery stakeholders in 2015 (see Insurance in Chapter 3)
PFDA	<ul style="list-style-type: none"> • Supported the fisheries sector development by providing postharvest facilities and services that have benefitted 45,494 individuals. Specifically, PFDA: <ul style="list-style-type: none"> ◊ Managed eight regional fish ports (Navotas, Sual, Lucena, Camaligan, Iloilo, Davao, Zamboanga, General Santos) ◊ Established 15 municipal fish ports and rehabilitated 5 existing municipal fish ports ◊ Constructed four ice plants
PhilRice	<ul style="list-style-type: none"> • Served as DA's research and extension arm focused on rice-related technology: <ul style="list-style-type: none"> ◊ Supported the National Year of Rice ◊ Operated rice extension modes: PhilRice Text Center, PinoyRice Knowledge Bank ◊ Developed 36 varieties suited for irrigated, rainfed, and saline environments from 2010 to 2015 ◊ Developed easy-to-use technologies: updated Leaf Color Chart and Minus One Element Technique, new formulation of pest control input Metarhizium, NutriRice Milk
Quedancor	<ul style="list-style-type: none"> • Focused on collection activities, collecting Php 145.78 million in 2015 out of its Php 250-million target to improve its financial position • Managed to provide guarantee to 14 accredited lending entities, benefitting 178 beneficiaries with Php 6.025-million credit assistance
SRA	<ul style="list-style-type: none"> • Supported the development of the sugarcane industry through: <ul style="list-style-type: none"> ◊ Implementation of block farming program: 53 sites by 2015 ◊ Passage of Sugarcane Industry Development Act which allocates Php 2 billion to SRA from 2016 and every year after ◊ Completion of the Sugarcane Industry Roadmap

* Transferred to the Office of the Presidential Assistant for Food Security and Agricultural Modernization (OPAFSAM) on 5 May 2014 by virtue of EO No. 165

Bureau of Animal Industry (BAI)

In the past, there has been a trend showing imported animals—which are usually infused with genetic materials—being favored over native animals because of the latter's small size, slow growth rate and performance. However, the emergence of new diseases, the effects of climate change and global trends have brought new appreciation for the importance and economic value of native animals with their ability to adapt, survive, and reproduce under adverse conditions and with low production inputs.

In 2011, this prompted BAI to initiate the development of domesticated native animals for food through the creation of the Philippine Native Animal Development Program (PNADP) through AO No. 15 s. 2010. Following this move, a roadmap that focuses on the promotion and development of indigenous genetic materials was formulated with initial phenotypic work based on guidelines of the Food and Agriculture Organization (FAO)

The program saw the creation of the PNAD website (pnad.da.bai.gov.ph). It also led to the conduct of a benchmarking tour in Taiwan's native animal program to inform the crafting of future guidelines and amendments to the PNAD. The BAI also facilitated the organization of associations which will tackle the issues and concerns of their respective sectors: the Philippine Federation of Native Animal Farmer, the Native Pig Industry Association of the Philippines, and the Philippine Duck Meat Association.

To provide additional stock for dispersal that will result in additional income to female beneficiaries, the BAI assisted in the creation of multiplier farms for native animals in Cagayan Valley (native pigs), Bicol Region (native chickens and pigs), Eastern Visayas (native chickens, pigs and goats), LGU-Juban, Sorsogon (native chicken) and the LGU-Quezon Province (native pigs). In addition, the National Swine and Poultry Research and Development Center (NSPRDC) in Quezon is being maintained as the Gene Pool for native pigs and poultry, and the Dumarao Livestock Production Center (DLPC) in Capiz for native cattle.

Bureau of Fisheries and Aquatic Resources (BFAR)

Rapid deterioration in coral, mangrove, and swampland covers has persisted through the years. Coral cover declined from 5 percent in 1981 to just 1 percent in 2004, mangrove cover declined from 175,000 hectares in 1980 to 117,000 hectares in 1995, while swampland cover contracted from 375,000 hectares in 1977 to 246,063 hectares in 2011.¹⁵ The National Stock Assessment Program of BFAR found that 10 of 13 major fishing grounds in the country are heavily exploited and overfished. This bleak scenario reflects a sector in dire need of attention and regulation.

To be able to perform its mandate and implement reform measures to address issues within the sector, BFAR received the much-needed increase in budget support from an average of Php 2 billion from 2002 to 2010 to Php 4.26 billion from 2011 to 2015. From this allocation sprung investments in production equipment such as the payao or fish-aggregating device and postharvest facilities such as ice plants, cold storages, and community fish landing centers (see National Fisheries Program in Chapter 2). More importantly, BFAR was able to expand its fishery regulatory capabilities through the purchase of patrol vessels for each province (excluding landlocked CAR) and the registration of fishers and fishing vessels (see Regulatory Services in Chapter 3).



One of the significant achievements of the agency is the continuous success in enforcing science-based annual closed season in major fishing areas. Zamboanga Peninsula, Visayan Sea, Davao Gulf, and Northern Palawan. This move has resulted in improved harvest of bigger fish and the reappearance of some species that are no longer caught in these areas. Other LGUs are now working closely with the bureau for the possibility of establishing the same resource management measures following the ecosystems approach to fisheries management (EAFM). So as not to affect the livelihood of fishers, fish processing companies and exporters paid fishers 12 months' worth of wages during the nine-month fishing operations, leaving them three months during the closed season for other income-generating opportunities.

The six-percent point increase in poverty incidence among fishers from 35 percent in 2003 to 41.3 percent in 2006 – 2009 while fishery production was on the rise may be attributed to the unregulated commercial fishing operations in waters that rightfully belong to small fishers. BFAR sought to provide more teeth to the existing Fisheries Code of 1998 and successfully incorporated the provision of no fishing among commercial vessels within 15 km of the shoreline of municipal waters. The regularly updated FishR and BoatR systems that the BFAR developed serve to effectively implement this provision. This ensures that small fishers would be the ones to benefit from the increase in production.

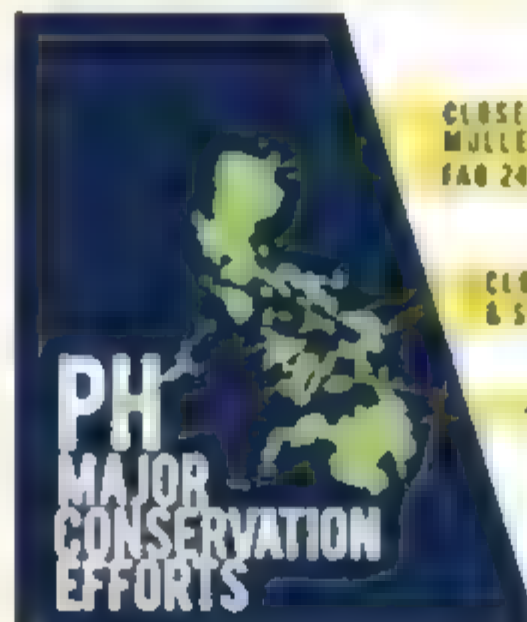
Essentially, BFAR shifted from a production-oriented to an income-oriented approach in implementing the National Fisheries Program. The BFAR launched the Targeted Actions to Reduce Poverty and Generate Economic Transformation (TARGET) Program, with the construction of 504 community fish landing centers (CFLCs) in 2015 – 2016 as its major component. These facilities are meant to provide small fishers the means to preserve the quality of their catch and perform minimal processing (e.g. drying). The prevented losses not only generate more income for fishers but also augment the available supply.

Bureau of Soils and Water Management (BSWM)

From 2010 to 2015, BSWM has undertaken major projects aimed at helping the country's agricultural sector. Through initiatives like Vulnerability Mapping and Map Portal BSWM has been able to significantly contribute to developing and sustaining local agriculture given the challenge of climate change and other weather occurrences that threaten to hinder the productivity of the sector.

Vulnerability Mapping. In 2012, the BSWM spearheaded the Vulnerability Mapping of municipalities in the Philippines. The project is in support of the PRDP (formerly Central

Philippines Rural Development Project) in recognition of the negative impact of climate change on agricultural production and rural development. Some of these effects are the decline in food production due to crop losses, interruption in the establishment of rural economy derived from profitable agri-enterprise and livelihood, and the disruption of crop production systems due to climate variability and unpredictable weather patterns.



**CLOSED SEASON ON LOBED RIVER
MULLET OR LINDONG** Region VI
FAO 242 CHAMBO OF EXPORTATION ON BELVERS Region VII

**CLOSED SEASON ON SARDINES
& SMALL PELAGICS** Region VIII

MANAGEMENT PLANS

- ✓ Blue Crab (Region VI)
- ✓ Swordfish (Region VII)
 - ◆ BAH on Mullet-hubot
 - ◆ BAH on Sargassum
 - ◆ BAH on Black Corals

Through an inter-agency partnership between the government and the private sector, BFAR implemented major conservation efforts such as annual closed season on selected species in major fishing areas.

The vulnerability assessment is a valuable tool in ranking municipalities according to climate condition and their capability to adjust given their inherent land suitability and adaptive capacity. This decision support tool considers the combined effects of various parameters to agricultural production, infrastructure, and natural resource management.

The project outputs were (1) the framework for the assessment of vulnerabilities, the Vulnerability & Adaption (V&A) tool in agriculture built upon climate sensitivities and (2) ranking of the municipalities through the use of geographic information system (GIS). These outputs were used to guide the evaluation of subproject proposals such as commodity investment plans and infrastructure development.

Agromet cum Climate Change Website. The DA, in partnership with the Department of Science and Technology (DOST), implemented the US PL-480 project **Establishment of Agro-Meteorological Stations in Highly Vulnerable Agricultural Areas: A Tool for Climate Change Adaptation and in the Development of Local Early Warning System** (Agromet-CUM CLIMATE CHANGE). It aims to reduce the vulnerability of the agriculture sector to the impacts of climate change and related natural disasters, specifically resource-poor upland farmers and communities. This is accomplished through the timely and accurate agro-meteorological data monitoring using automated weather stations (AWS). The project results are:

- 100 new AWS were established and 51 AWS owned by PAGASA and ASTI were upgraded
- 18 soil maps were updated and digitized covering 36,000 hectares
- 11 trainings on data collection, simple analysis, and utilization of agromet with a total of 550 participants in the following regions: CAR, Ilocos, Cagayan Valley, Central Luzon, MIMAROPA, Bicol, Western Visayas, Northern Mindanao, Davao, SOCCSKSARGEN, and Caraga
- 9 trainings on utilization of agromet data in disaster risk-reduction management with a total of 140 participants in the following regions: CAR, Ilocos, Cagayan Valley, Central Luzon, Bicol, Western Visayas, SOCCSKSARGEN, and Caraga, and ARMM
- 14 Enhanced Farmers Field School with a total of 280 participants
- the establishment of the website agromet.da.gov.ph

BSWM MAP Portal. Launched in June 2014 during the sixty-third anniversary celebration of the BSWM, the BSWM MAP Portal (bswm.maps.da.gov.ph) features a library of over 2,500 maps of the agency which can be downloaded for free. The project, which was undertaken with the participation of the World Bank and the DA, makes available to the public 15 years' worth of fieldwork, validation, and consultations with stakeholders concerned with the rational utilization of our natural resources. These maps provide baseline information that is valuable for planning, including potential agricultural development and strategic prioritization of commodities.

Soil Health Maintenance. In 2015, BSWM spearheaded the country's observance of the International Year of Soils with the theme "Healthy Soils for a Healthy Life" to raise global awareness on the significance of soils for food security, nutrition, and environmental protection.



National Dairy Authority (NDA)

It was under this Administration that the NDA received allocations of Php 170.47 million in 2012, 2015 and 2016 and Php 261.74 million in 2013 and 2014, paving the way for the implementation of dairy development programs.

More than two decades ago, the National Dairy Development Act of 1995 mandated the allocation of Php 340 million in 1996 and an annual augmentation fund of Php 140 million. However, this did not materialize and instead the allocation for NDA has averaged Php 50 million yearly from 1996 to 2011. The NDA relied on Official Development Assistance (ODA) to augment its meager budget particularly for the importation of cattle and the establishment of dairy processing plants.

With increased budget support and with the collaboration of private farms, the dairy sector sustained an average growth rate of 5.2 percent in the last five years producing 20,380 metric tons of milk in 2015 from 15,860 metric tons in 2010.

Dairy Multiplier Farms (DMF). DMFs were established to accelerate the increase in number of dairy animals supplied locally, eventually reducing the need for animal importation. Through the US PL-480 funded project **Multi-Year Dairy Animal Procurement and Breeding Program to Upscale Heifer Production for the Local Dairy Industry**, 57 dairy multiplier farms were established throughout the country with an initial stock of 2,761 dairy animals (net of quarantine and shipment mortality). With support from the National Government, the NDA was able to procure 1,246 dairy animals for the establishment of an additional 23 DMFs. By the end of 2015, 80 DMFs have increased their stock from the initial 4,007 to 7,854 dairy animals.

DMFs have also become a major contributor to NDA-assisted milk production areas. From contributing 1 percent (79.65 metric tons) in 2011, its share grew to 34 percent (5,150.50 metric tons) in 2015.

Milk Feeding Program (MFP). A priority project of the NDA, the MFP is included in the 2013 National Priority Plan of the Government. The NDA has been a consistent advocate of milk feeding in schools and communities. From 2010 to 2015, more than 270,000 children nationwide benefitted from the milk feeding activities it administered.



The Torreja Dairy Multiplier Farm in Ibaan, Batangas received 148 dairy animals from the Multi-Year Dairy Animal Procurement (MYDAP) Program funded by US PL-480. By 2015, a total of 80 DMFs had been established.

National Food Authority (NFA)

Decades of buying palay and importing rice at high prices and selling it cheap to traders and consumers led to the ballooning of the debt of the NFA from Php 24.87 billion in 2004 to Php 176.80 billion in mid-2010.

Reforms were implemented in NFA to address key issues and change the public's negative perception of the agency:

- The reputation of the NFA has been associated with the poor quality of its stocks. Through its strategic stock management **Wala nang Pangit na Bigas ang NFA**, the agency initiated the implementation of 9/6 policy for storing palay and rice inventory. It involves a maximum storage period of 9 months for palay and 6 months for rice.
- To improve the agency's fiscal situation and efficiency of operation, the NFA pursued the upgrading or construction of its warehouses, silos, and dryers and introduced middle-priced NFA rice. These operational reforms enabled the NFA to provide consumers with better quality rice at affordable prices and improved the effectiveness of its rice distribution.
- For the benefit of palay farmers, the NFA exerted all efforts to enhance palay procurement to increase their income. Changes were made so farmers could more easily meet requirements, and production areas not usually reached by traders were covered through the deployment of mobile procurement teams.
- Reforms in the rice importation procedures were pursued. For private sector importations, the NFA conducted post-validation/verification/authentication of documents to deter dummy importers and introduced security features in import permits to prevent recycling of documents. For government importation, the NFA conducted a very transparent bidding procedure which resulted in savings of Php 1.4 billion for 800,000 metric tons worth of transactions in 2014.

The shift in stance in food security (i.e. producing more rather than relying on importation), along with operational reforms has resulted in substantial reduction of NFA's outstanding debt to Php 155.07 billion by the end of 2013.

National Irrigation Administration (NIA)

The NIA played a vital role in the rapid production increase in rice through the construction, restoration, and rehabilitation of irrigation systems. Under the DA's watch, the NIA generated and restored 219,093 hectares of irrigation from 2011 to 2013. Irrigated harvested areas accounted for more than 80 percent of the increase in production from 2010 to 2015. An additional 100,000 hectares was due for delivery in 2014 when the NIA's oversight was transferred to the Office of the President.

Even with this accomplishment, there was a notable slippage in service areas delivery. Upon review, delays were traced to the practice of projects being submitted for funding prior to the completion of feasibility studies and detailed engineering designs and the lack of support for the construction of lateral canals to connect water sources to farms.



To address the situation, the DA initiated reforms in the NIA system to improve its performance. One, it required all projects to have a completed feasibility study before being submitted for funding, and two, all projects for contracting and awarding required the approval of the NIA Board of Directors. A system-based financial and engineering audit was also recommended to identify the numerous unfinished projects caused by the chopping up of funds to satisfy various demands for irrigation works in different areas. Likewise, funding for land development and construction of lateral canals was included in future budget deliberations.

Other reforms were:

- The use of linear meters in measuring rehabilitation works, funding for which are based on standard costs
- Monitoring of project implementation through geotagging, preparation of parcellary maps, and use of digital scanners
- Enhanced asset management through system-based appraisal and planning
- Organizational reform including rotation of regional managers and irrigation management officers and improvement of vision, mission, and objectives.

Finally, through the initiative of the DA, the NIA completed the update of its inventory of irrigation systems which had not been available at the beginning of this Administration

National Meat Inspection Service (NMIS)

Through the **Meat Establishment Improvement Program** of the NMIS, 22 LGU-owned and managed animal slaughterhouse facilities were rehabilitated and improved from 2011 to 2015, making the total of rehabilitated facilities 37 from 2007 to 2015. Another six rehabilitation projects are currently underway. The program is being implemented under a 50:50 cost-sharing scheme between NMIS and LGU-beneficiaries, with the collaboration of the Bureau of Local Government and Development of the Department of Interior and Local Government (DILG) and the Department of Budget and Management (DBM).

According to a NMIS-commissioned study conducted by Infoshare Management Systems (IFMS) the program has resulted in an increase in meat retail shops and meat trading, which has translated to more jobs and income within the covered municipalities. Further, the program attained the desired impacts in terms of promotion of meat safety at the municipal and provincial level, institutional development, wider distribution of income from livestock growers and retailers, increase in LGU income, and promotion of more jobs and businesses.

Backyard slaughtering has decreased in areas where the improved facilities were established. Retailers and consumers also reported having assurance of safe and better meat quality for retail and consumption. For LGU-beneficiaries, the program also provided an additional source of income that can be used to fund other projects or meet financial obligations to creditors and their constituents, resulting in an average gross income of Php 1.6 million annually added to the treasury.

The supply chain evaluation revealed that stakeholders at every level – livestock growers, traders, retailers, and consumers – benefitted from the program. Hog raisers, in particular, gained the highest net income at Php 48.65 per kg

National Tobacco Administration (NTA)

Aggressive global campaigns against smoking, increased domestic taxation and corresponding import liberalization and global competition were some of the issues confronting the local tobacco industry. Despite challenges, the NTA was able to improve the lives of some 800,000 farmers and their families by promoting the balanced and integrated growth and development of the tobacco industry.

The NTA undertook the Tobacco Growing System (TGS), a market-oriented production system that ensures the availability of volume and the high quality of tobacco needed by manufacturers and exporters. It also guarantees farmers the necessary production and technical assistance for better produce and incentives for meeting quota and other performance indicators. From 2010 to 2014, the TGS assisted 18,142 tobacco farmers cultivating 12,449 hectares of tobacco plantations nationwide. Production assistance extended to them reached Php 400.51 million. As an intermediary, the NTA also facilitated the provision of production assistance worth Php 881.57 million from tobacco buyer firms, government financial institutions (GFIs), and LGUs, benefiting 44,097 farmers covering 27,714 hectares.

Yield across all varieties of tobacco increased from 2,130 kg per hectare to 2,258 kg per hectare resulting in an increase in net income of 14 percent from the 2010 figure of Php 49,874 per hectare to Php 56,902 per hectare in 2014.

The NTA also initiated the Renewable Fuelwood Energy Farm Project that seeks to address fuelwood and other forest resource requirements of farmers while assisting in the reforestation efforts of regions engaged in tobacco growing. From 2013 to 2015, the Kahuyang Pangkabuhayan at Pangkalikasan (KPP) was able to plant a total of 11.5 million trees in 4,598 hectares. Held during the same period was the Synchronized Tree Planting Day with 281,300 participants from national and local government agencies and units, schools, and civic groups. Altogether, around 3.1 million tree seedlings were planted as part of the activity with the objective of restoring ecological integrity.

From 2010 to 2015, the industry was able to tap 35,997 hectares of tobacco farms, benefiting 52,382 farmers. Production from these farms reached an average of 66 million kg. As a key revenue-generating tool of the National Government, tobacco taxes amounting to Php 68 billion in 2013 grew to Php 73 billion in 2014. Overall, for the period 2010 – 2015, revenue from tobacco-based excise taxes increased by 131 percent, from Php 32 billion to Php 73 billion.

Philippine Coconut Authority (PCA)

Recognizing the importance of coconut as an export commodity and as a means of poverty reduction, the DA allocated funds to the coconut development program implemented through the PCA. From a budget of half a billion in 2011, the PCA's budget increased annually, quadrupling to Php 2.38 billion in 2014.

From 2011 to 2013, more than 34.7 million coconut trees were planted under the Participatory Coconut Planting Project and the Coconut Seedling Dispersal Project, while more than 1.65 million bags of fertilizer were used on 413,264 hectares (at 4 bags per hectare) under the Soil Fertilization Project.

In addition, the Kasaganaan sa Niyugan ay Kaunlaran ng Bayan (KAANIB) project was initiated under this Administration to address basic issues of food



security and low productivity in the income of coconut farmers. By the end of 2013, KANIB had established 527 sites, providing livelihood projects to coconut farmers.

Philippine Carabao Center (PCC)

The PCC is the country's center of excellence in large ruminant research. It maintains a gene pool and undertakes the upgrading of native carabaos. Experts in animal genetics and related fields work at the PCC laboratories to provide the research support for improving breeds and enhancing production.

The PCC carabao-based enterprise development (CBED) program and dairy buffalo multiplier farms (DBMF) comprise the agency's outreach programs created to engage farmers and communities in carabao-based ventures particularly in designated impact zones.

The CBED program aims to help participating carabao owners and farmers' cooperatives in creating additional sources of income, helping to ensure at least a 25-percent increase in farm income per year. The CBED will also help to build a critical mass of Philippine carabaos, crossbreeds, and murrah buffaloes for commercial scale carabao-based enterprises in communities within the identified dairy zones. To date, a total of 224 cooperatives and associations have benefitted from the CBED program.

The DBMF program, on the other hand, began in 2014 with an aim to improve efficiency in the multiplication and propagation of good quality dairy buffalo genetics to be utilized in the establishment of a viable commercial buffalo-based dairy farm. In this manner, buffalo genetic sources may be widely spread and not limited only to the PCC.

The first DBMF was launched in the town of Javier in Leyte province and is being supervised and monitored by PCC-Visayas State University which covers Eastern Visayas. Since its establishment, seven more DBMFs have been created: two in Tarlac (Magao Buffalo Multiplier Farm and RG Agustin Multiplier Farm), two in Cagayan (YumWha Incorporated and Cagayan Valley Development Cooperative), two in Nueva Ecija (Riverside Livestock and Poultry Farm Inc. and Stephenham Farm), and one in Cebu (Lamac Multipurpose Cooperative Multiplier Farm).



Dairy multiplier farms help increase the number of local stocks available. PCC's first dairy buffalo multiplier farm is located in Javier, Leyte.

Philippine Center for Postharvest Development and Mechanization (PhilMech)

Designing farm machinery and equipment is PhilMech's key role in agn-fishery modernization. To this end, PhilMech has developed several technologies such as an improved village corn mill for white corn, drying systems for granulated cassava, coco-water pasteurizer-chiller, machine vision systems for white corn and rice, extraction process of pectin from mango peels, efficient and low cost impeller type grain huller, new belt dryer and other improved drying systems for cassava, cacao, and other crops



A total of 80 tramlines were completed from 2011 to 2015 in addition to the 46 existing tramlines in 2010. Construction of 16 more tramlines are currently underway. Shown above is the upgraded Agncultural Tramline System which allows farmers to travel with their produce

In 2011, PhilMech spearheaded the AgnMach Roadshows called Makina Saka in Luzon, Visayas and Mindanao to promote farm mechanization. This has become an annual event for the Rice Program (see National Rice Program in Chapter 2)

Alongside the promotion of mechanization, PhilMech also conducts vigorous R&D activities. For agricultural mechanization and postharvest technologies, PhilMech was able to complete 12 activities including the design and development of a cassava harvester (phase II-lifter/puller), the field evaluation of biocontrol agents in managing crown rot disease of banana, the utilization of biodegradable composites material in the production of fruit bags, and the evaluation of machines used in paddy production like the mechanical transplanter and combine harvester among others

In 2014, PhilMech launched the Agrinnovation agenda that introduces modern innovations by infusing new technologies with existing infrastructure. This has led to the design and development of a tractor-mounted transplanter, a tractor-mounted combine harvester, an onion seeder, a compact village corn mill, a brown rice huller, a cassava digger, and a granulated cassava belt dryer

As mandated by the AFMech Law of 2013, PhilMech developed the National Agricultural and Fisheries Modernization Research and Development Agenda for 2015–2020



Philippine Fiber Industry Development Authority (PhilFIDA)

From 2010 to 2015, PhilFIDA made significant strides in further boosting the local fiber sector. Created in 2013 by merging the Fiber Industry Development Authority and the Cotton Development Authority, PhilFIDA is responsible for overseeing the growth and development of the Philippine fiber industry, knowing that there are about two million Filipinos who are dependent on the fiber sector for their daily living. PhilFIDA fulfills its function through production support, education and training, extension support, research and development, fiber processing and utilization technologies as well as standards implementation and trade regulation.



PhilFIDA supports the fiber industry through programs that enhance production, improve fiber quality, provide postharvest technologies, and develop a strong market base for the industry. From 2010 to 2015, the agency produced 881,957 abaca tissue culture plantlets, 1.5 million abaca corms/suckers and 38.38 kg of abaca seeds. Of these, 579,552 abaca tissue culture plantlets, 641,393 abaca corms/suckers and 29.95 kg of abaca seeds were distributed to farmers. The agency also opened 9,961 hectares of new abaca areas benefitting 8,938 farmers. Finally, 6,752 hectares of old and unproductive abaca areas were rehabilitated for the benefit of 3,932 farmers.

Some 88 percent of the world's supply of abaca is produced in the Philippines. Abaca fiber is credited as a product of agriculture while the value added from turning abaca fiber into pulp, cordage, fabric and other finished products is accounted for under manufacturing, a subsector of industry.

As part of its extension support, PhilFIDA's Abaca Disease Management Project (ADMP) covered a total of 37,085 hectares in Bicol Region, Western Visayas, Eastern Visayas, Zamboanga Peninsula, Davao Region, and Caraga from 2010 to 2015. To enhance the knowledge and skill of the industry's stakeholders, the agency conducted various training programs on fiber production and technology. These include 557 Farmers' Training with 18,061 participants; 565 Livelihood Training with 6,517 participants; and 15 Training of Trainers with 639 farmers. In addition, 38,180 IEC materials were distributed.

To aid in fiber processing, PhilFIDA spearheaded the establishment of 40 abaca stripping centers and the installation of 40 units of stripping machines as well as the distribution of 13 units of handlooms in Quezon, Camarines Norte, Aklan, Iloilo and Sarangani from 2010 – 2015. The agency also provided 420 units of improved hand stripping devices (IHSD) as well as over 43 drying facilities to abaca farmer's cooperatives and associations.

To ensure fiber quality, PhilFIDA undertook the inspection and approval of 3.6 million bales of abaca fibers, the issuance of 11,440 Primary Certificates on fiber inspection and 20,657 Permit to Transport Fibers (PTF) covering the period 2010 – 2015. In the process, PhilFIDA generated Php 7.7 million from license fees collected from industry participants.

Philippine Rice Research Institute (PhilRice)

Created to oversee the quality of production of the country's staple food, PhilRice has been at the forefront of efforts to ensure that the necessary inputs and technology reach stakeholders for the development of the local rice industry.

Through the PHILRICE Text Center (PTC), PhilRice responded to 300,000 queries from farmers, consumers, and researchers. The bulk of these questions dealt with rice pest control, crop variety, and nutrient management. The PTC also served as a weather hotline for rural communities, especially those encountering weather disturbances.

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today!





PhilRice also established the PinoyRice Knowledge Bank (www.pinoynrice.com) which acts as its main repository of information. From 2010 to 2015, the website and its library of online learning modules, handouts, and video clips were accessed by 130,000 visitors. There were also 5,000 downloads of video-based materials from the site.

In 2013, PhilRice spearheaded the celebration of the National Year of Rice (NYR) which enjoined the country to be "RICEponsible." The celebration included activities and events centered on promoting the cause of achieving rice sufficiency. The campaign was reported various media channels, including print media, television broadcasts, and radio shows. To date, PhilRice continues the "Be Riceponsible Campaign" that has been warmly supported nationwide.

Being at the forefront of research and development for rice-related matters, PhilRice pursued initiatives in developing the needed technology beneficial to the sector. These include varietal development, the creation of systems and diagnostic tools, and research on value-adding activities on rice.

From 2010 to 2015, of the 105 varieties registered in the National Seed Industry Council, 36 were developed by PhilRice. These are suitable for irrigated (21), rainfed (8) and saline (7) environments. From these, the NSIC Rc308 and the NSIC Rc318H emerged as the highest-yielding inbred and hybrid variety, respectively.

For easy-to-use technologies, the Institute prides itself in creating decision support tools and technology platforms involving the aspects of integrated nutrients and pest management. Some of their works include the updated version of the Leaf Color Chart (LCC), Minus-One Element Technique (MOET), and a new formulation of the pest control input *Metarhizium*. PhilRice also formulated the NutriRice Milk, a nutrient-rich beverage which is a mixture of gamma amino butyric acid (GABA) gleaned from rice and fresh buffalo's milk. The product is available at PhilRice, the Philippine Carabao Center, and the NE Pacific Mall in Nueva Ecija.

The "Benchmarking the Philippine Rice Economy Relative to Major Rice-Producing Countries in Asia" was a study conducted in 2012 – 2014 to compare rice production systems in China, India, Indonesia, Thailand, Vietnam, and the Philippines. The study was jointly undertaken by PhilRice, the International Rice Research Institute (IRRI), and the Philippine Council for Agriculture and Fisheries (PCAF). PhilRice has sought to conduct the study in the last 15 years but has only received the required funding to do so under this Administration.

Sugar Regulatory Administration (SRA)

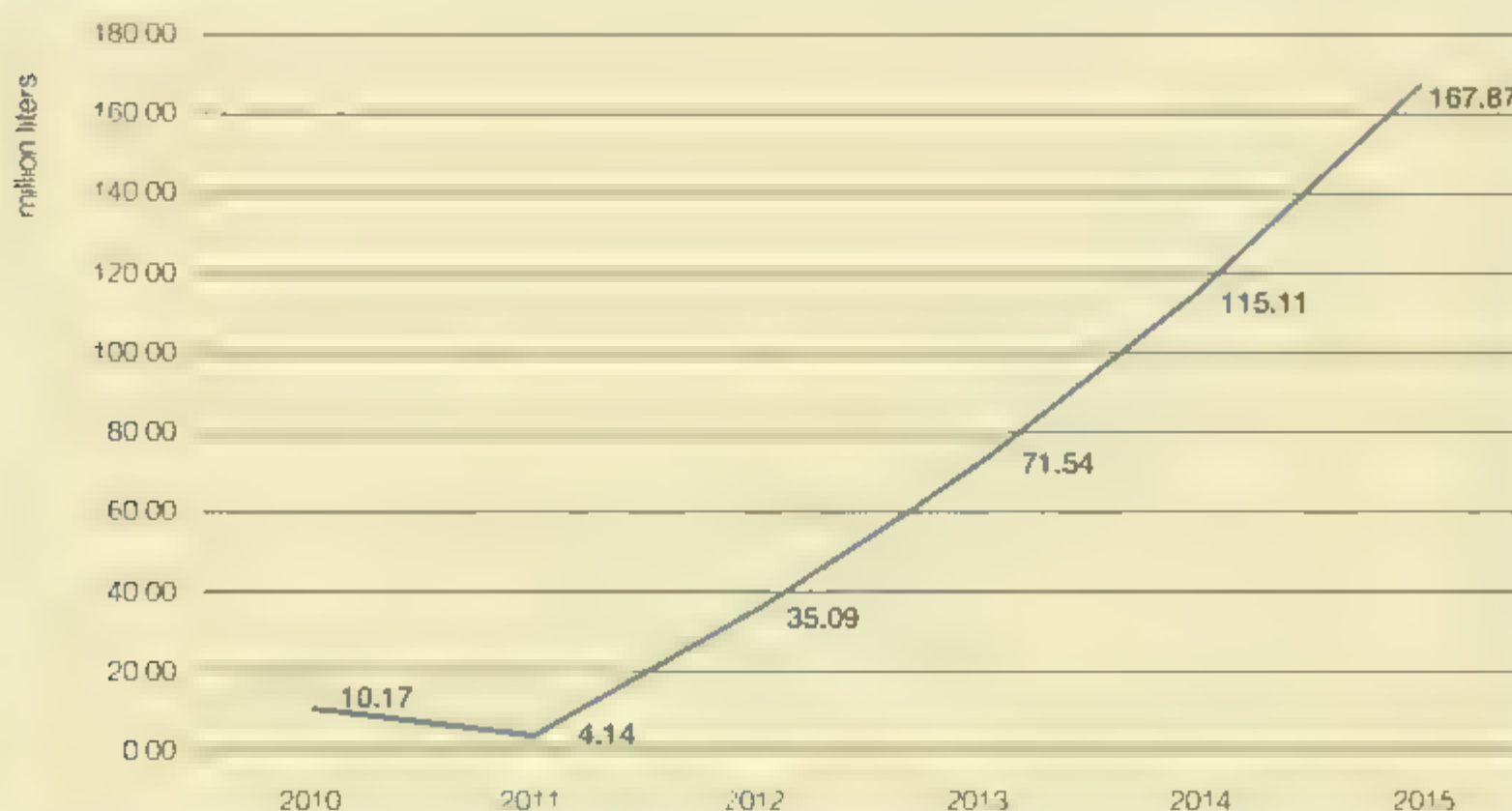
The SRA was established by EO No. 18 dated 28 May 1986 with the mandate to promote the growth and development of the sugar industry through greater participation of the private sector and to improve the working conditions of laborers. Further, RA 9367 (Biofuels Act of 2006) mandated the SRA as member of the National Biofuel Board (NBB) to develop and implement policies supporting the Philippine Biofuels Program and ensure security of domestic sugar supply.

Through the efforts of the SRA, the sugarcane industry achieved 11.6 percent higher average production at 25.5 million metric tons from 2011 – 2015 compared to 22.8 million metric tons in 2006 – 2010.

Among the innovations introduced under this Administration is block farming, a strategy which aims to improve productivity of sugarcane farms through agrarian reform beneficiaries' organizations. It is a convergence initiative involving the DA, SRA and DAR. The idea behind block farming is to consolidate farms to take advantage of plantation-scale production to achieve economies of scale. From 2011 to 2015, the SRA operationalized 53 block farms. The DA and SRA provided the necessary infrastructure (irrigation and FMRs) and starter inputs for diversification of production to beneficiaries. The block farm project also tapped the Department of Trade and Industry (DTI) for marketing investments, the Department of Labor and Employment, Department (DOLE) for skills development of farmers and workers, and the Philippine Department of Energy (DOE) for ethanol and power generation development.

For its part, bioethanol production expanded tremendously since 2010. In 2015, production grew 16 times at 167.87 million liters compared to 10.17 million liters in 2010 (Fig.11).

Figure 11. Annual bioethanol production, 2010 – 2015 (in million liters)





The Hawaiian-Philippine Company Inc. manufactures, refines, imports and exports sugar, sugarcane, molasses and other by-products. The company is based in Silay City, Negros Occidental

The SRA encouraged mill improvements, power generation, and product diversification initiatives through its advocacy and information campaign. These efforts aim to shield the industry from the effects of full trade liberalization under the ASEAN Economic Community (AEC) which came into force in 2015

On 27 March 2015, the Sugarcane Industry Development Act or RA 10659 was approved. The law aims to (1) establish productivity improvement programs, (2) provide the needed infrastructure support; (3) enhance research and development of other products derived from sugar, sugarcane, and their by-products, (4) provide human resource development and extension services and (5) provide financial assistance to small farmers. For 2016, the SRA was allocated Php 1.8 billion, more than half of which will go to farm-to-mill roads that will connect existing block farms to mill districts.

Furthermore, the SRA completed the updating of the Sugarcane Industry Roadmap in March 2016. The roadmap serves as guide in the identification and implementation of appropriate programs and interventions to boost productivity of the industry. It prescribes a multi-product sugarcane industry with sugar, bioethanol, and power as major products, and bioplastics, biowater, biofertilizer, and special sugars as sources of revenue.

Achieving More with Development Partners

World Bank: Mindanao Rural Development Program 2 (MRDP2) and the Philippine Rural Development Project (PRDP)

At the start of the Aquino Administration in 2010, the three-year old Mindanao Rural Development Program (MRDP2) which started in July 2007 had moved only 15 percent of program funds due to LGU issues in raising the required 50 percent counterpart funds. With the agreement of the Development Budget Coordinating Committee (DBCC), a more affordable cost-sharing scheme was initiated. The existing cost-sharing scheme was therefore suspended on 19 September 2011 by the Executive Secretary through Memorandum Order No. 24. Upon analysis of the situation and after meeting with local executives, the DA proposed to reduce the required LGU counterpart from 50 percent to 10 percent. From then on, until the closing of the project in December 2014, MRDP2 accelerated and achieved outstanding results.

From 2007 to 2014, MRDP2 implemented 344 farm-to-market roads (FMRs) projects in 26 provinces in Mindanao. These projects have generated a total of 111.34 km of new FMRs and rehabilitated and upgraded a total of 1,119.23 km. Total FMR project cost amounted to Php 3.06 billion of which 10 percent (or Php 305.80 million) were LGU counterparts. These FMR projects have benefitted about two million people.

Moreover, 23 communal irrigation systems (CIS) were constructed in the provinces of Bukidnon, Davao del Sur, Davao Oriental, North Cotabato, Agusan del Norte, Surigao Del Norte, Surigao del Sur, and Basilan. These new irrigation systems generated a total of 2,175 hectares. Additionally, 2,907 hectares were restored from the rehabilitation of 16 existing CIS. Fifty-four communal water faucets were also installed in support of rural infrastructure in targeted areas.

As MRDP2 closed on 31 December 2014, it yielded the following results:

Table 12 Results of MRDP2, baseline and end-of-project

Parameter	Baseline (2007)	End-of-Project (2014)	% Increase/ (Decrease)
Increase in Household Income	P72,604	P84,294	35.87
Agricultural Investments			93.0
Incidence of Water-Borne Diseases per Region	29	10	-65.5
Average Travel Time, minutes	87.5	26.75	-69.4
Average Cropping Intensity	129	180	51.0
Time to Fetch Water	87.5	28.75	-69.4



Undersecretary Emerson U. Pineda, National Program Director of the Philippine Rural Development Project, welcomes the participants of the World Bank Review Mission before the project visits

The success of MRDP2 paved the way to a further partnership with the World Bank through the PRDP of 2014 – 2020. Approved by the World Bank in August 2014, the PRDP is a six-year national project under the DA that aims to establish a modern, inclusive, value-chain oriented and climate-resilient agriculture and fisheries sector in partnership with LGUs throughout the country.

With a total project cost of Php 27.5 billion, 92 percent of PRDP funds are allocated for rural infrastructure and value-chain oriented enterprises under a cost-sharing scheme with LGUs. Provided in the PRDP Operations Manuals, projects are identified and vetted with the use of Value Chain Analyses (VCAs) and Priority Commodity Investment Plans (PCIP), jointly prepared by PRDP and partner LGUs.

A year since its implementation, the project has accomplished the following as of December 2015

• I-PLAN

I-PLAN aims to enhance the Agricultural and Fisheries Modernization Plan through science-based tools. It also aims to harmonize the regional and provincial Agriculture and Fisheries Modernization Plan through the formulation of the PCIP using the value chain approach.

By December 2015, I-PLAN had already conducted 97 VCAs. Of this number, 34 have already been approved by the National Project Coordination Office (NPCO), with 18 of the approved projects coming from the Mindanao cluster. In addition, 63 PCIPs were approved by the Provincial Development Council (PDCs) and 6 CCIPs were approved by City Development Councils (CDCs).

• I-BUILD

I-BUILD aims to improve the links from production areas to markets to enhance the efficiency of transporting agricultural products. It also aims for higher productivity as a result of increased cropping intensity and yields, food security and improved health from readily available potable water, lower postharvest losses resulting in higher volume of outputs, and more efficient support facilities.

The number of rural infrastructure (RI) subprojects in its portfolio stands at 509 in 69 provinces with a total cost of Php 36.79 billion. This amount is already 98 percent above the Php 18.53 billion project allocation for RI. Of the total proposals, 194 SPs worth Php 11.8 billion were approved for funding. One SP worth Php 4.3 million is already completed while 74 other SPs worth Php 3.67 billion in total are undergoing construction. The remaining 119 approved SPs worth Php 8.13 billion are currently on procurement. Table 15 is the breakdown of the approved subprojects by type.

Table 15. Rural infrastructure subprojects under PRDP

			Total (Php million)
Farm-to-Market Road (FMR), km	2,377.23	402	31,111.50
FMR with bridge, km	312.54	28	4,476.09
linear meter	1,410.84		
Bridge, linear meter	400.80	7	232.31
Communal Irrigation System (CIS), hectare	550.00	5	116.40
Potable Water System (PWS), households	39,963	26	570.88
Others, unit	201	41	280.90
TOTAL		509	36,788.09

The PRDP has initiated a request for additional financing due to the high demand for projects with offers to counterpart funding from the local governments. The DA Clearinghouse approved the proposal on 11 November 2015. The proposal will be endorsed to the National Economic and Development Authority (NEDA) for review and approval.



• I-REAP

I-REAP aims to engage broad sections of the sector in the production of marketable surplus. To achieve this, the program works on investing strategic segments of priority commodity value chains and strengthening collaboration between the DA and the LGUs. It shall strengthen and develop viable agri-fishery based enterprises through efficient value chain of key regional agri-fishery product.

PRDP has approved 98 SPs worth Php 311.80 million through issuance of NOL (No Objection Letter). Of these, one SP worth Php 34.83 million is already being implemented. In the pipeline are 59 SPs worth a total of Php 1.04 billion that have been approved by the Regional Project Advisory Board (RPAB) and 17 SPs amounting to Php 190.22 million whose business plans are currently being prepared for review.

“With just two months, the project has already mobilized implementing units which resulted in a substantial pipeline.”

– Carol Geron, World Bank Task Team Leader during the kick-off meeting in February 2015. The PRDP was declared effective on December 2014.

PAMANA: Peace through Development

Payapa at Masaganang PamayanAn or PAMANA is the National Government's convergence program that extends development interventions to isolated, remote and conflict-affected communities, ensuring that they are not left behind.

For the municipality of Cateel in Davao Oriental, development through PAMANA brought peace, helping the community and transforming lives. In 2013, the DA, in coordination with the municipal and provincial governments of Cateel and Davao Oriental and the Philippine Army, identified the Alwagwag Farmers Multi-Purpose Association (AFMA) in Cateel as a beneficiary of PAMANA. The association was granted upland rice production and postharvest facilities amounting to Php 750,000. The project has not only benefitted the AFMA members but also other farmers in the community, including rice farmers whose incomes were increased by the project. Aside from savings in the milling cost, AFMA member Pendaton Quino and resident and AFMA client Deofortino Lantayona Jr. say that the installation of the milling facility in Cateel has reduced their transportation cost.

“Papunta sa Poblacion, piso ang pamasahé bawat kilo ng palay at piso rin pabalik. Pero ngayon napakalaki ng tulong na naibigay ng gobyerno. Ang gagastusin ko sana para sa pamasahé papuntang Poblacion upang magpagiling ay natatabi ko na. Ngayon, milling fee na lang ang binabayaran ko sa mas murang halaga. Malaki ang natulong ng gobyerno para tumaas ang aking kita. Maraming, maraming salamat,” Pendaton said. He uses his savings from transport cost to finance other household expenses.

More than the increase in incomes and reduction of transportation cost, the project has renewed hope among the farmers of Cateel and nearby barangays.

Convergence: Package of Support to Farmers

The DA, the Department of Agrarian Reform (DAR) and the Department of Environment and Natural Resources (DENR) launched the Enhanced National Convergence Initiative (Enhanced NCI) for Sustainable Rural Development in mid-2010 to address the issues of fragmentation and duplication of programs and services that have persisted since the NCI's conception in 1998. The Enhanced NCI promotes a framework of sustainable agriculture and rural development which integrates people, their economy and their environment, optimizes resources, and creates substantial effect in the short-term. In the long-term, the framework also makes possible model-building across ecosystems, production systems, and rural poverty sectors and small producers.

In the past five years, the municipality of Javier in Leyte has been a convergence model. In 2011, the municipality, with an estimated 4,598 farm households, was chosen as one of the pilot sites for the **Local Convergence Agro-Enterprise Clusters** (LCAEC) project. Since the project's implementation, the quality of life in the municipality has improved dramatically with the complete electrification of households, a remarkable decline of maternal and infant mortality rate due to the provision of health services and facilities in the area, and reduced travel time from 1.5 hours to 25 minutes around the town due to the circumferential road constructed. Palay production also increased from 80 cavans to 180 cavans per hectare with the construction of a dam that irrigates 600 hectares of farms. Further, the employment rate increased through the Javier Salabat Production Center and the Coco Coir Plant where 27 individuals and 75 households have been employed, respectively. This has led to more than 1,000% increase in daily income per capita in Javier from Php 4.65 in 2011 to Php 66.67 in 2014. Soon, the Northeastern Leyte APTC will rise in the municipality.

NGO: Spread Organic Agriculture in the Philippines

Driven by a common goal of promoting organic agriculture, the Government through the Agricultural Training Institute (ATI) has partnered with the NGO Spread Organic Agriculture in the Philippines (SOAP). SOAP is an expanding network of organic agriculture practitioners, enthusiasts, specialists, and supporters who seek opportunities to enhance their knowledge and skills as well as share their experiences and learning. ATI, as the focal agency for extension, implements the organic agriculture extension program and provides the necessary support in various collaborations with SOAP.

Seminars are part of the collaborative activities of ATI, SOAP and other DA agencies. These are conducted monthly as a venue for participants to learn about different organic agriculture practices, topics, and issues. The seminar also features an organic agri-preneur market which sells organic products. ATI provides the venue, training management staff, supplies and other support as host of the activity while SOAP confirms participants and invites resource speakers to the lecture-seminar series.

To date, 51 training courses and seminars have been conducted with the participation of 3,848 organic agriculture enthusiasts from different sectors.





One of the seven major R&D projects of the Rice Program, the Philippine Rice Information System (PRiSM) is a rice monitoring system aimed at improving rice production in the Philippines. Data are collected through remote-sensing technology, crop modeling and field and farm surveys.

IRRI: Philippine Rice Information System (PRiSM)

Under the Food Staples Sufficiency Program (FSSP), the DA, the Philippine Rice Research Institute (PhilRice), the International Rice Research Institute (IRRI) and Sarnap (Switzerland) partnered in the implementation of one of the big ticket research projects – the Philippine Rice Information System (PRiSM). The project is designed to revolutionize the way data and information on rice farming is gathered and disseminated.

PRiSM is an online information system that can aid in decision-making related to food security such as identifying appropriate interventions to address rice yield gaps and providing rapid response to emergency situations. The project collates new and existing information and research tools that will map and monitor rice growing areas and generate detailed season data on rice yields, flood- and drought affected, and wind-damaged rice areas, farmers' agronomic practices, pesticides and fertilizers used, and pest and disease incidence and outbreaks in the Philippines.

PRiSM aims to provide real-time, accurate data and information on rice crop production status by developing and installing a remote sensing operational system (satellite-based with crop modeling and ground validation) for rice monitoring. In 2015, data on the production situation, pest injuries and actual yield were collected from 780 rice fields for the wet season and 881 for the dry season in 15 regions.

FAO: Long-Standing Partner in Improving Farmers' Lives

The Food and Agriculture Organization (FAO) of the United Nations is the DA's active partner in improving food and nutritional security, enhancing agricultural production and productivity, advancing the sustainable management of natural resources, and promoting agricultural adaptation and mitigation to climate change, and reducing disaster risks.

One of its notable initiatives in the past five years is the introduction of the Farm Business School (FBS) approach to extension, a strategy which was adopted by ATI as one of its regular programs starting 2014. As well, FAO conducted the Mid-Term Assessment of the FSSP that provided insights on the program's performance vis-à-vis its targets, studied its economic implications, and gave recommendations on how to improve its effectiveness.

In 2013, FAO was among the first to provide emergency and recovery assistance in rebuilding the agriculture and fisheries-based livelihoods in communities affected by Typhoon Yolanda. Assistance was extended to 89,454 households who were provided certified rice seeds, corn seeds, and fertilizers.

Under the Coconut-Based Farming Systems (CBFS) program, 11,711 persons were trained on Integrated Pest Management (IPM), climate-smart agriculture, livestock/poultry production and management, Sloping Agriculture, Land Technology (SALT), crop care production and management, and entrepreneurship and asset-building. Meanwhile, under the Fisheries Program 4,951 fisher households were provided with postharvest kits, boat engines and fishing gear while 6,789 fisher households were trained on product handling and development, bivalves and seaweed production, and good manufacturing and postharvest practices.

The Analysis and Mapping of Impacts under Climate Change for Adaptation & Food Security (AMICAF) is also a project of the FAO.



National winners of the poster-making contest pose with FAO Country Representative Jose Luis Fernandez and DA Secretary Proceso Alcala. The FAO and the DA celebrates this occasion every year with the contest participated in by children from different parts of the country as a special feature.



US PL-480: Accelerating Dairy Industry Development

Increasing the base stock of the local dairy industry is a need that is being addressed through the US PL-480-funded project **Multi-Year Dairy Animal Procurement and Breeding Program to Upscale Heifer Production for the Local Dairy Industry**.

The project is responsible for providing 2,984 foundation stocks (2,761 animals net of mortality and shipment losses) creating 57 dairy multiplier farms (DMF) in the country. DMFs were created to fast track the growth in the number of dairy animals by establishing local suppliers and eventually weaning away from animal importation. DMFs pass on their animal harvest to new dairy farmers as payment for the original animals they received and earn income from sale of animals and milk produced.

Other projects funded under the US PL-480 are the **Expanded Human Resource Development Program Phase II, Goat Production Project for the Accelerated Hunger Mitigation Program, Accelerating the Genetic Resources Improvement Program for Beef Cattle and Small Ruminants, and Strengthening the Livestock Biotechnology Center**.

IFAD: Partner in Poverty Reduction

The International Fund for Agricultural Development (IFAD) works with the Government and other partners to help reduce poverty in some of the poorest areas in the country. Its programs and projects are built on strong country ownership and are the result of a long participatory process in which a wide range of stakeholders were consulted.

One of the programs completed in the last five years is the Rapid Food Production Enhancement Programme (RAFPEP) which aims to increase food production of farmers on rainfed and lowland irrigated areas on a sustainable basis. It has two projects, the Rapid Seed Supply Financing Project (RaSSFIP) and the Irrigated Rice Production Enhancement Project (IRPEP). RaSSFIP was completed in September 2011, providing 803,806 bags of rice certified seeds to 411,990 farmers.

On the other hand, the IRPEP has conducted 559 trainings to strengthen IAs within communal irrigation systems (CIS) in Western Visayas, Eastern Visayas, and Northern Mindanao. It has also maintained a seed buffer stock for immediate replanting after natural calamities and even for early planting. Under IRPEP, 180 agricultural technicians and farmer leaders were trained on the PalayCheck System and 171 FFS were conducted with an average of 30 participants each. Finally, through IRPEP, 109 CIS were rehabilitated or restored.

The IFAD also assisted in the recovery and reconstruction of typhoon-affected smallholder farmers in Western and Eastern Visayas through the Haiyan Agriculture Rehabilitation Program (HARP). The program provided a grant of Php 179.70 million for the procurement and distribution of 63,695 bags of certified seeds and 62,615 bags of urea fertilizers used in 62,968 hectares.

Finally, already approved by the NEDA Board is the project FishCORAL which amounts to Php 1.86 billion. The project will develop eight bays in Bicol Region, Eastern Visayas, Caraga and ARMM through bay-focused activities and livelihood programs for residents around the development sites. The project runs from 2015 to 2019.

Japan 2KR: Food Security for Underprivileged Farmers

In 2014, Agrikultura: Kaagapay ng Bayang Pinoy or AKBay Program Phase II was implemented to help Typhoon Yolanda victims recover their livelihood after the calamity. A funding of Php 139.98 million was approved by the Japanese Government under the Japanese Grant Assistance for the Food Security Project for Underprivileged Farmers (2KR) with PCAF as the proponent. The program covered farming and fishing communities in four severely damaged provinces of Eastern Visayas: Biliran, Leyte, Eastern Samar, and Western Samar. Among these provinces, 8,500 farming and fishing (FFHs) were targeted to benefit from the aid.

As of December 2015, a total of 6,524 farming and fishing households were provided with farm and fishery inputs and have undergone capability-building.

The completed AKBay Program Phase 1 and the ongoing upgrading of five Livestock Oksyon Markets: Lemery LOM in Batangas, Uson LOM in Masbate, Leon LOM in Iloilo, Canlaon City LOM in Negros Oriental and Sibalom LOM in Antique and two BPI Pesticide Residue Laboratories (National Pesticide Analytical Laboratory and Davao Pesticide Analytical Laboratory) are also projects funded by the Japan 2KR.

Winrock International: Developing Cold Chain Systems

The Winrock International Institute of Agricultural Development, under the USDA 2013 Food for Progress Program, implements the **Philippines Cold Chain Project** in Caraga. The project aims to increase the productivity of horticulture, meat, and fish value chains by developing cold chain systems and building the capacity of producers and processors. The project likewise seeks to expand trade of agricultural products. To meet its goal, Winrock forged partnerships with the DA, DTL, DAR, First Community Cooperative (FICCO), Cold Chain Association of the Philippines (CCAP), East-West Seed Co. (EWSC), Northern Mindanao School of Fisheries, PILMICO, and the Southeast Asian Fisheries Development Center (SEAFDEC). The project, which started in September 2013, will end in July 2017.

In its first year of implementation, Php 1.94 million in loans was released to 72 lobster growers through partner institution FICCO. Training sessions on improved financial services and commodity production were conducted as part of the loan application process. Further, 20 agro-dealers and input suppliers were accredited from which the beneficiary producers received their respective needed inputs and supplies.

KOICA: Helping Modernize the Rice Industry

One of the biggest challenges in increasing rice supply in the country is the high level of postharvest losses. The Philippine Center for Postharvest Development and Mechanization (PhilMech) estimates that from harvesting to milling, palay postharvest losses reach 15 percent. With 18.1 million tons palay production in 2015, this means almost 2.7 million metric tons were lost in the postharvest processing. For drying, losses can be attributed to the current widespread practice of solar drying; for milling, the use of old milling facilities.

With a Php 649-million grant from the Korean International Cooperation Agency (KOICA), the DA through PhilMech established four rice processing complexes (RPC) in major rice-producing provinces, namely, Sta. Barbara, Pangasinan, Pototan, Iloilo, Pilar, Bohol, and Matanao, Davao del Sur. KOICA likewise provided the design of the RPC and access to its experts' technical assistance. The RPCs aim to reduce postharvest losses from 15 percent to 8 percent and provide services such as training, continuous drying, storing and milling, purchasing of wet paddy, and selling of high quality milled rice. The project boasts of a processing capacity of 24,000 metric tons for drying, 24,000 metric tons for milling, and 8,800 metric tons for storage.

To ensure professionalism and objectivity in the management of the RPC enterprise, the project contractor employed and gave a month-long training to a professional management team on the operation and management of the RPC. The team was also given a two-week training on technical operations, maintenance, repair and adjustment of the facilities and equipment. Each site was provided an initial operating capital of Php 20 million that would make it self-sustaining. It must be noted that in earlier programs, an operating capital was not provided.

The project benefitted farmers through increased income from Php 0.50 to Php 1.00 per kg, increased milling recovery by at least four percent, improved milled rice quality, and reduced postharvest losses (4 – 6%) of the processed volume. The project also generated employment for professionals and laborers.

In the event of typhoons when prices of wet paddy drop and some traders stop buying, the RPCs have successfully helped affected farmers and provided assistance in stabilizing local prices of palay and milled rice in the area. These RPCs serve as a model for designing our own rice processing centers under the Rice Program.



Turned over to two farmers-organizations, Abacopa Federation of Cooperatives and Pangasinan Federation of Farmers Association, in October 2014, the KOICA-funded RPC in Sta. Barbara, Pangasinan provides drying, milling, sorting and storage services. Mechanized drying during the wet season saves the farmers significant postharvest losses.

Agrikulturang Pilipino Framework



A farmer participates during the Farmers' Field Day and Farmers' Forum on 23 June 2015 at the Bureau of Plant Industry's La Granja National Crop Research, Development and Production Support Center in Barangay La Granja. Around 1,000 farmers attended the gathering.

The agricultural sector faces two major challenges: climate change and changes in the global market. Addressing these requires a new approach—one that not only considers the supply side, particularly domestic production, but also the demand side (such as markets, industrial users and consumers, and the global situation).

Agrikulturang Pilipino was the framework that guided the DA programs and services from 2011 to 2016. Its guiding principles are the following:

1. Food security based on sufficiency. Food sufficiency and food security are not mutually exclusive objectives that should be contraposed to each other. Instead, staples sufficiency, especially among poor communities, is the best way to ensure food security. At the national level, staples sufficiency provides a stable base for food security addressing both the insecurity of food supplies beyond national control and the insecurity arising from displaced food producers.

Meeting production targets alone is not enough. Food security entails not only availability but also accessibility and affordability. Low production and marketing costs are key to achieving these. The Food Staples Sufficiency Program (FSSP) sought to achieve more than just 100 percent rice sufficiency. It pursued enhanced productivity and competitiveness of Filipino farmers and sought to promote the production and consumption of other staples.

For decades, the country has relied on rice imports to meet its food requirement. However, the 2008 global financial crisis, when prices of food almost doubled, showed that the country cannot rely on the international market for its staple food. For example, in 2008 when the country imported 2.4 million metric tons of rice, the global price of rice rose from US\$ 332.39 per metric ton in 2007 to US\$ 700.20 in 2008 with the months of April and May recording prices of US\$ 1,000.

The average annual surplus in the global rice market (after all other countries' demands are met) from 2008 to 2012 was 2.8 million metric tons while the country's demand was at 14.7 million metric tons in 2013.¹⁶

This level of demand is unlike that of Singapore's requirement for its population of 5.4 million in 2015 or less than half the population of Metro Manila. Even Malaysia, a country that used to target much lower rice sufficiency level has adjusted its target to 100 percent sufficiency by 2020.¹⁷

2. Sustainable agriculture and fisheries and natural resource management.

To meet the challenge of an ever-growing population, there is a need to continually increase productivity. However, it is necessary to ensure that this is done in an ecologically and economically sustainable manner. This principle takes into consideration the limited bio-physical carrying capacity of the Philippines even as investments seek to expand the capacity of human resources.

This is especially true for the fisheries subsector. For years, to expand production, fishers—commercial and municipal alike—engaged in unsustainable fishing that resulted in the decline of the fish population and destruction of fish habitats. Fishing must be regulated but fishers must be provided an alternative livelihood while fishery resources recover.

It should be noted that it was at a time of peak fishery production when poverty in the fishery sector likewise rose from 35 percent in 2003 to 41.3 percent in 2009. In contrast, the highest decrease in poverty incidence occurred in the fisheries sector from 2009 to 2012 with a decline of 2.1 percent, higher than the national average decline in poverty of 1.1 percent. Two lessons have been drawn by BFAR from these observations: (1) ensuring that small fishers have maximum access to fishing grounds intended for them by law, and 2) going for value more than volume of catch translates to higher incomes.

In the end, natural resource management must seek to optimize rather than merely maximize the development of our natural resources.

3. Local development. While all outputs can be aggregated to calculate the total contribution of agriculture and fisheries to national development, *Agnikulturang Pilipino* gave due **emphasis to the contribution of agriculture and fisheries to local development.** This principle recognizes that inclusive growth happens at the local level, pushing the DA to strengthen its ties with local governments. Notably, LGUs that made agriculture their priority have become the DA's leading partners. The cooperation with LGUs achieved during this Administration led to the quick takeoff of the Philippine Rural Development Project.



The Rural Development Framework adopts the principles and strategies that Agrikulturang Pilipino laid out in early 2011. Its foundation is a rural agro-industrial base. This is a framework that encompasses the engagement of producers and landless rural workers in value-adding ventures.

The Agrikulturang Pilipino Checklist includes the following necessary features:

1. Broad-based. Agncultural development should benefit not just the big producers but especially the small producers with increased incomes as a primary objective. This can be achieved through engagement in diversification and additional on-farm and off-farm sources of revenue streams.

Diversification and Farmers' Choice: Contrary to popular notion, rice farmers in the country have diversified sources of farm income. Data from the RSBSA revealed that only 27.9 percent of farmers and fishers are engaged in a single commodity like rice, corn, coconut or fishing, while the rest are engaged in two or more commodities. Rather than shifting from rice to high-value crops to improve income, the Palayamanan promotes rice-based farming integrated with high-value crops, livestock and even fish, in recognition of the farmers' need to produce their own rice for household food security.

Promoting diversification shall be market-oriented with targeted participation in commodity value chains.

2. From farm to table. Interventions should address all stages in the food chain from production to consumption. The DA's policy is to invest on public goods that farmers cannot afford such as irrigation, FMRs, postharvest facilities, research, and testing centers. Aside from these, food safety and quality standards must also be followed and responsible consumption must be promoted to our communities. The passage of the Food Safety Act in 2013 paved the way towards the strengthening of the food safety regulatory system in the country, a significant move to protect consumer health and facilitate market access of local food and food products.



Enterprise development: The PRDP emphasizes the need to develop farmers and fishers as agri-entrepreneurs. In order to maximize the income of farmers and fishers, they should not be mere suppliers of raw inputs but also processors and sellers of final products.

3. Resilience. Although implicit in the concept of sustainability, resilience is given a distinct emphasis because of the increased impacts of climate change and changes in the global market. These actual and potential effects have to be integrated into any agricultural and fisheries development plan, supported by data culled from combined satellite mapping of vulnerabilities, soil suitability, and market analysis.

The expanded Vulnerability and Suitability Analysis ranked municipalities according to changing climate conditions and their capabilities to adjust due to their inherent land suitability and adaptive capacity. The outputs were used to guide the evaluation of subproject proposals such as commodity investment plans and infrastructure development.

The Philippine Rice information System or PRiSM project aims to revolutionize the way data and information about the rice crop is collected and used. PRiSM gathers information on rice, such as where it is grown, when it is grown, and what affects its growth. This data is gleaned through the use of remote sensing and information and communications technology. For example, remote sensing satellites can be used to provide us information on rice areas affected by natural calamities such as flooding, wind or drought, while mobile phones can be used to collect real-time data on farmers' fields about pest and disease injuries.

Concrete FMRs, irrigation with canal lining, and fiberglass boats are just some of the innovations made under this Administration. The seed buffer stock maintained by each region allowed immediate replanting of calamity-damaged crops, ensuring no missed cropping and therefore, uninterrupted food supply in calamity-affected areas.

One key strategy is the empowerment of farmers and fishers, including provision of timely and useful information about climate change and market change. This can help them shift back from a situation of uncertainty to calculable risks. In addition, they must be assisted to diversify options and be introduced to adaptive technologies.

4. Partnerships. The promotion and development of Agri-Pinoy calls for partnerships at various levels:

Partnerships with national agencies. Our starting partnership is with the members of the National Convergence Initiative which is chaired by the DA, the Department of Agrarian Reform (DAR) and the Department of Environment and Natural Resources (DENR). However, other national agencies are sought as important partners such as the Department of Public Works and Highways (DPWH) for infrastructure, the Department of Science and Technology (DOST) for pursuing innovations, and the Department of Trade and Industry (DTI) for the optimal merging of production, processing and market expansion where farmers and fishers can be significant participants.

Partnerships with local governments. Devolution demands collaboration with the Department of Interior and Local Government (DILG) to assist LGUs in integrating agriculture and fisheries into their local development plans. This calls for technical assistance, capacity building, and strategic project partnerships. To this end, some steps that can be pursued involve the proposed DILG support for Barangay Agriculture Workers and the activation of the barangay agriculture committee heads.

Partnerships with farmers and fishers' organizations. There are almost 10 million farmers and fishers with most of them engaged in multiple commodities. They need to be organized into production clusters and developed to become farmer-technicians, farmer-scientists, and farmer-entrepreneurs. For example, the active partnership with irrigators' associations has been identified as a key feature of the successful increase in palay production even before the benefits of infrastructure investments started to kick in. Similarly, production and marketing clusters for cassava, coffee, onions, organic vegetables corn have shown early results of enhancing farmers' share in farm revenues.

Partnerships with the private sector. Different modes of attracting and engaging private business in agnculture is key to expanding agn-based opportunities. The provision of basic agn-fishery infrastructure was a big piece of this effort, as well as the conduct of commodity summits for rubber, coffee, cacao, and other commodities where multistakeholder encounters led to collaboration among producers and private investors. Through the PRDP, farmers and fishers engage in organized production and value-adding facilitating linkages with processors and institutional markets.

Partnerships with international organizations. The DA partners with several international organizations in designing and implementing foreign-assisted projects. Not only do these organizations provide project funding, they also provide technical expertise.

"Bridging the gap, touching the heart" sounded like a sentimental battlecry until it became a defining call for all DA officials and employees to renew ties and win back the trust of farmers and fishers in government through open communication and effective delivery of programs and services.

The Secretary set the example by visiting all provinces in the country within the first two years of his term, interacting with farmers and fishers during forums and paving the way for the open distribution of interventions. Wherever the Secretary went, thousands of farmers and fishers would come. Wherever farmers and fishers were, the Secretary would go—no matter the difficulty or the distance. It was through these personal interactions that stakeholders knew that the Government was taking them seriously





FOOD STAPLES SUFFICIENCY PROGRAM



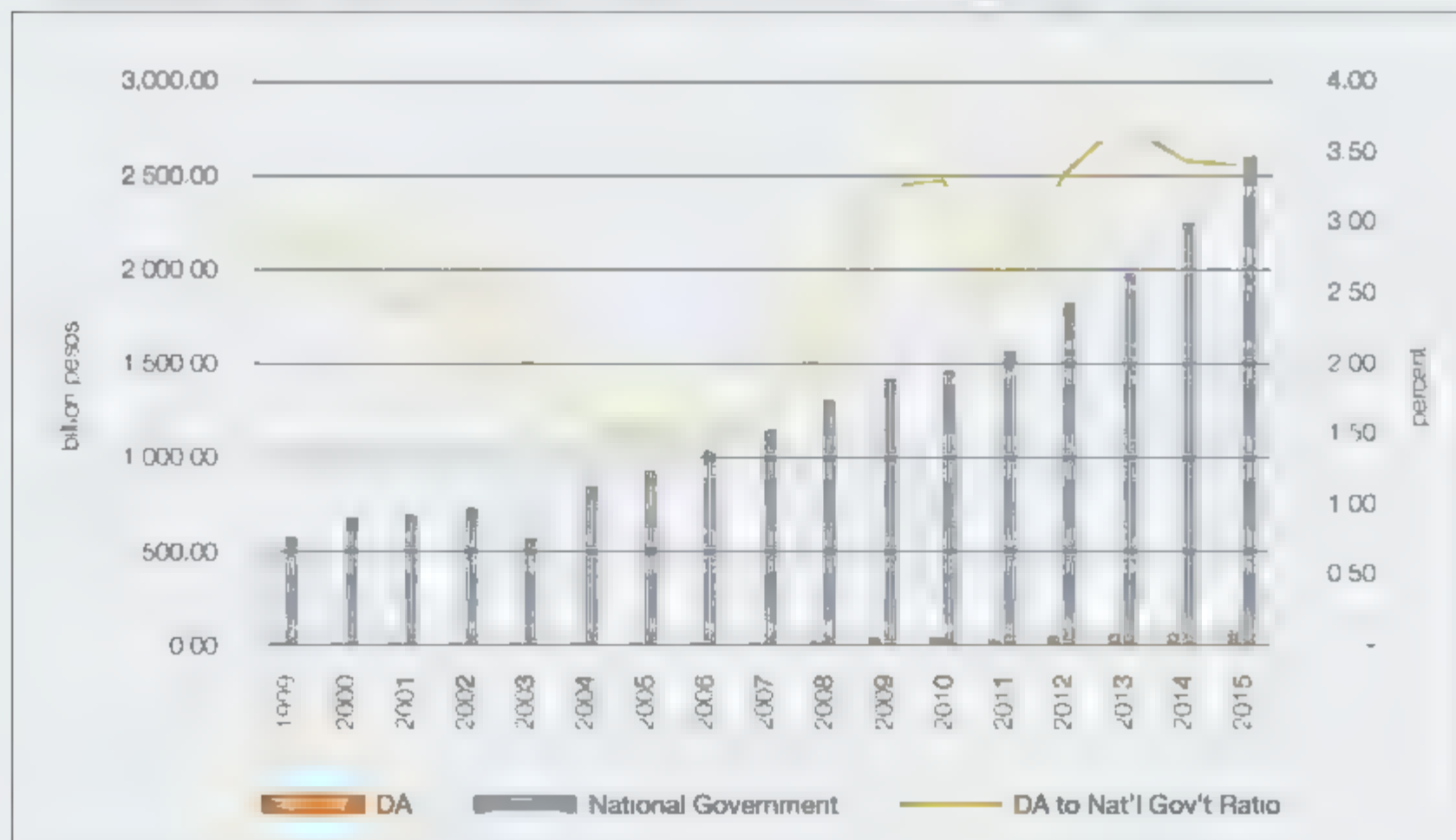
Documenting the policies, programs, and activities of the Department of Agriculture was an important aspect of this administration. Samples of materials published from 2012 to 2016 are shown here as part of the handover and as a contribution to the institutional memory of the organization.



Financial Highlights

Underinvestment has plagued Philippine agriculture.¹⁸ The budget allocated to the DA was small relative to the size of the National Government budget—a mere 2.63 percent of the total national budget in 1999 to 2001 under President Joseph Estrada and 2.19 percent from 2002 to 2010 under President Gloria Arroyo. (See Fig. 12.) However, under the Aquino Administration, the average share of agriculture in the national budget increased to 3.26 percent. In absolute amount, the DA received an allocation of Php 339.7 billion from 2011 to 2015, equivalent to the budget allocated under different administrations since President Ramos from 1994 to 2010.¹⁹ If the 2016 budget of Php 91.75 billion is considered, the budget of DA under the Aquino administration exceeds the 26-year budget allocated to the department from 1975 to 2010. This just shows how much the current leadership supports the agri-fishery sector.

Figure 12 Comparison of budget allocation for the DA and the National Government, 1998 – 2015



Source: DA Budget from DA, National Government from PSA

The budget went to the different programs of the DA as shown in the following tables (Note: The 2015 budget reported in the table below does NOT include the budget of the National Irrigation System, the National Food Authority, the Philippine Coconut Authority, and the Fertilizer and Pesticide Authority which were transferred to the Office of the President in May 2014). The accomplishments are discussed in the previous chapters of this report.

In line with the frontloading of investments in irrigation, a total of Php 85.19 billion was allocated to NIA irrigation projects which accounted for 31.21 percent of the total DA budget. This was followed by Php 32.81 billion budget for FMRs. Among the commodity programs, the Rice Program received the highest allocation of Php 31.86 billion (11.67%), followed by Fisheries with Php 16.60 billion (6.08%). (See Table 16.)

Table 16. The DA budget by program and by office, 2011 – 2015 (in Php million)

	2011	2012	2013	2014	2015	2016	% Share to
Irrigation Projects - NIA	12,790.65	24,454.05	26,829.30	21,111.85	-	85,185.85	31.21
Farm-to-Market Roads	2,500.00	5,000.94	7,054.68	12,000.00	6,250.00	32,805.62	12.02
National Rice Program	4,317.22	6,181.17	7,454.08	6,900.45	7,003.51	31,856.42	11.67
National Corn Program	483.64	950.74	1,524.30	1,796.97	2,296.52	7,052.17	2.58
National High Value Crops Program	926.87	1,336.66	1,356.66	1,673.45	2,199.70	7,493.33	2.75
National Livestock Program	682.33	1,027.86	1,027.86	1,350.44	1,616.21	5,704.70	2.09
National Fisheries Program	1,792.91	2,400.51	3,655.65	4,181.91	4,567.07	16,598.05	6.08
Organic Agriculture	900.00	927.20	927.20	878.49	636.37	4,269.25	1.56
Quick Response Fund	-	500.00	1,000.00	500.00	500.00	2,500.00	0.92
Credit Facility to Agrarian Reform Beneficiaries	-	-	1,000.00	-	-	1,000.00	0.37
Market Development	675.08	911.76	884.96	231.90	217.61	2,921.30	1.07
Other Support Program	6,356.51	5,719.46	7,459.02	8,088.23	9,020.64	36,643.85	13.42
Locally Funded Projects	2,911.18	1,450.58	2,886.19	9,762.55	7,432.65	24,443.15	8.35
Foreign Assisted Projects	861.90	2,394.91	2,009.59	1,649.52	7,543.07	14,489.08	5.31
TOTAL	33,199.39	36,253.82	35,089.49	70,112.79	30,422.39	272,992.76	100.00

In terms of allocation by office, the NIA received the largest budget with Php 85.69 billion (31.39%). Second is the Office of the Secretary (OSEC) with Php 32.30 billion (11.83%), followed by BFAR with Php 21.21 billion (7.77%). The allocation for the OSEC included funds for general management and supervision, as well as support for operations. In 2015, the Central Office included allocations of Php 7.33 billion for the PRDP resulting in the sudden increase in OSEC allocation. (See Table 17.)

Table 17. The DA budget by office, 2011 – 2015 (in Php million)

OFFICE	2011	2012	2013	2014	2015	2016	% Share
Office of the Secretary*	5,645.12	6,113.84	5,550.93	4,941.37	10,351.6	32,302.93	11.83
Agricultural Training Institute	625.19	818.77	784.43	874.87	843.41	3,947.16	1.45
Bureau of Agricultural Research	661.44	720.66	703.29	999.99	1,122.36	4,207.73	1.54
Bureau of Agricultural Statistics **	370.33	383.50	427.88	416.86	-	1,598.57	0.59
Bureau of Animal Industry	296.94	467.68	484.50	746.49	1,361.10	2,631.80	0.96
Bureau of Plant Industry	334.42	338.92	445.98	374.53	332.44	1,886.08	0.69
Bureau of Soils and Water Management	803.73	956.34	513.03	293.98	130.24	2,957.33	1.08
National Irrigation Administration ***	12,790.65	24,454.05	27,329.30	21,111.85	-	85,685.85	31.39
Agricultural Credit Policy Council	25.71	27.53	1,030.61	55.90	2,037.84	3,177.60	1.16
Bureau of Fisheries and Aquatic Resources	2,366.62	3,020.19	4,648.94	4,915.13	6,260.43	21,211.31	7.77
Fertilizer and Pesticide Authority ***	49.52	53.02	60.73	57.44	-	220.70	0.08
National Meat Inspection Services	300.16	428.42	614.91	374.54	428.63	2,146.65	0.79
Philippine Carabao Center	622.15	531.92	472.26	481.36	404.76	2,512.48	0.92
Philippine Center for Postharvest Development and Mechanization (formerly BPHRE)	132.18	140.04	172.60	200.98	209.40	855.20	0.31
Philippine Council for Agriculture & Fisheries (created from NAFC & LDC)	1,015.99	138.76	768.58	343.47	169.64	2,436.43	0.89
Philippine Fiber Industry Development Authority (created from FIDA & CODA)	272.57	273.45	327.51	304.80	336.85	1,515.18	0.56
CAR	924.72	1,228.67	1,183.87	2,171.96	1,853.30	7,362.52	2.70
Ilocos Region	577.43	864.57	1,144.62	1,921.71	1,324.33	5,833.66	2.14
Cagayan Valley	646.11	1,184.32	1,598.85	1,790.23	2,035.00	7,254.51	2.66
Central Luzon	942.89	1,438.69	1,507.42	1,882.60	2,214.88	7,986.47	2.93
CALABARZON	655.82	1,000.15	1,425.36	1,848.87	1,459.46	6,389.66	2.34
MIMAROPA	439.40	946.39	1,092.53	2,058.25	1,366.49	5,903.06	2.16
Bicol Region	535.68	1,136.49	1,551.24	2,816.47	1,664.59	7,704.47	2.82
Western Visayas	593.42	1,168.97	1,915.70	2,520.54	1,697.50	7,896.13	2.89
Central Visayas	485.68	658.17	1,052.27	2,111.14	1,318.22	5,625.48	2.06
Eastern Visayas	472.51	847.96	1,380.24	2,640.58	1,675.35	7,016.64	2.57
Zamboanga Peninsula	397.23	687.31	1,131.64	1,718.19	1,239.88	5,174.25	1.90
Northern Mindanao	488.99	723.86	1,186.55	2,150.80	1,713.98	6,264.19	2.29
Davao Region	552.90	937.97	1,342.61	2,008.06	1,451.64	6,293.18	2.31
SOCCSKSARGEN	477.62	795.09	1,295.63	3,005.45	2,808.34	8,382.13	3.07
Caraga	374.38	557.21	1,043.78	2,176.05	1,553.71	5,705.12	2.09
ARMM	320.90	212.92	881.72	801.32	662.46	2,879.33	1.05
TOTAL	55,408.10	58,855.81	65,889.45	78,813.70	49,323.33	272,962.76	100.00



The table below shows the breakdown of the budget by major final output by the Administration. The five-year allocation of the DA under the Aquino Administration is notably higher than the nine-year allocation under the GMA Administration. This resulted in higher budget allocation for almost all major final outputs (MFOs) except for Information Services.

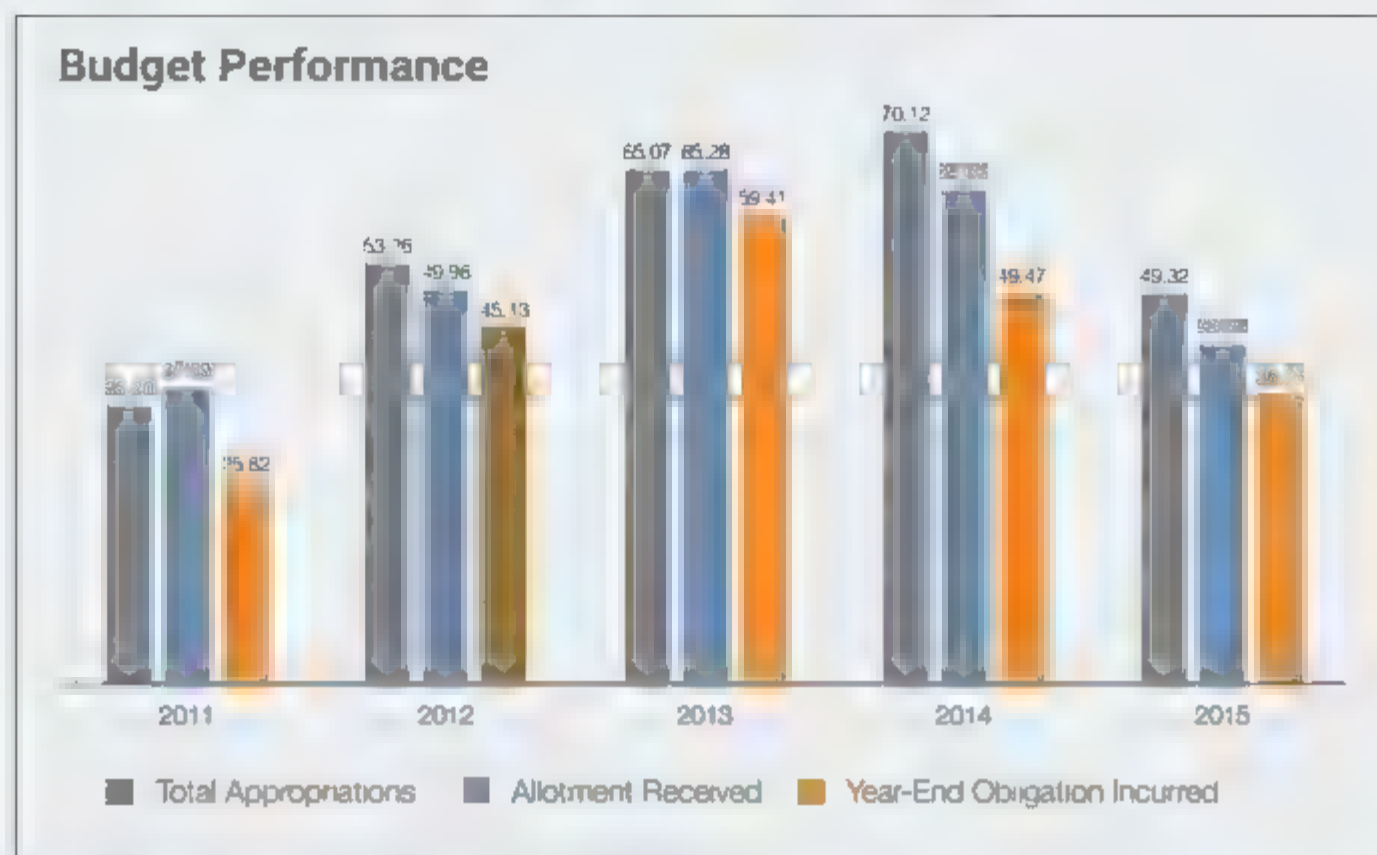
Significant increases can be noted in the annual average allocation for irrigation development due to the frontloading of irrigation investments, market development (construction of APTCs), and credit facilitation (capitalization of new credit programs). Postharvest facilities and other infrastructure, including FMRs, have almost tripled in amount under this Administration from Php 3.76 billion in 2002 – 2010 to Php 11.31 billion in 2011 – 2015. This is due in part to the concreting of FMRs. A new MFO was adopted in 2014 entitled Agricultural Equipment and Facilities Support Services which includes interventions for farm mechanization. This was previously lumped under production support and postharvest mechanization which used to be under postharvest facilities and other infrastructure.

Table 18. DA budget by major final output (in Php million)

AFMA	3 years	TOTAL		ANNUAL AVERAGE		
		2010	2015	2001	2010	2011-2015
Production Support	10,378.01	42,738.28	47,908.68	3,459.34	4,748.70	9,581.74
Market Development	4,888.1	2,257.5	6,181.84	14.34	250.84	1,291.97
Credit Facilitation	788.1	1,148.1	4,270.27	316.72	142.08	801.05
Irrigation Development	14,123.3	67,741.15	91,022.76	4,930.83	7,528.99	18,332.55
Postharvest Facilities and Other Infrastructure (including FMR)	7,753.90	3,4816.32	56,774.93	2,584.63	3,757.37	11,314.99
Agricultural Equipment and Facilities Support Services	0.00	0.00	8,284.34	0.00	0.00	1,666.87
Extension Support, Education and Training Services	3,509.09	11,711.38	16,080.71	1,169.70	1,301.26	3,216.14
Research & Development	3,624.21	6,282.31	9,656.28	1,208.07	638.03	1,941.26
Information Services	441.63	2,744.11	1,104.47	143.88	404.88	2,119.7
Regulatory Services	1,413.77	7,158.64	8,906.26	473.26	745.40	1,612.85
Policy Formulation, Planning and Advocacy Services	23.45	5,621.27	6,513.83	11.12	624.59	1,364.77
Subtotal (Excludes automatic appropriations)			255,697.78	74,505.47		53,473.85
General Administration and Support Services (GASS) and Support to Operations (STO)	4,777.55	14,075.41	12,840.62	1,592.52	1,563.93	2,568.12
TOTAL Operations, GASS, and STO				76,108.99		53,891.85

Excludes automatic appropriations

Figure 13. Budget performance of the DA, 2011 – 2015 (in Php billion)



Excludes budgetary support to government-owned and controlled corporations



To ensure efficient and inclusive delivery of its services to farmers and fishers, the DA holds a quarterly National Physical and Financial Assessment to evaluate the financial performance of each region, identify choke points, and recommend possible solutions



Endnotes

¹ The official nomenclature being used by the Philippine Statistics Authority (PSA) is Agriculture, Hunting, Fishery and Forestry.

² Annual average growth is computed as the average of year-on-year growth rates.

³ Description of typhoons taken from relevant news articles. Typhoons were chosen based on losses incurred in the agriculture and fishery sector.

⁴ Based on data from the Food and Agriculture Organization (www.faostat3.fao.org)

⁵ Quantitative restriction refers to "non-tariff restrictions used to limit the amount of imported commodities, including but not limited to discretionary import licensing and import quotas, whether qualified or absolute" (RA 8178). It is supposed to protect the rice industry from the influx of cheap imported rice by limiting the volume coming into the country so as not to adversely affect farmgate prices.

⁶ USDA Grains: World Markets and Trade, May 2014 issue

⁷ PhilMech 2015: Evaluating the Effects of Mechanical Transplanter and Combine Harvester on Rice Production, Farm Income and Rural Employment

⁸ As part of professionalizing "farm worker," members were registered to Social Security System and PhilHealth benefits.

⁹ Previously, the FMD-free declarations were in zonal basis where Mindanao was declared FMD-free in 2001, Visayas in 2002, and Zone 1 and 3 of Luzon in 2010.

¹⁰ Converted based on peso-dollar exchange rates from PSA: US\$ 1.00 = Php 45.11 (2010), US\$ 1.00 = Php 42.45 (2013), US\$ 1.00 = Php 44.39 (2014).

¹¹ Certification is valid only for one year.

¹² "Marun" is short for "marununot", an Ilocano term for dilapidated.

¹³ See Quinno PCIP, 2014-2018.

¹⁴ J. Emmanuel Pastries was the recipient of 2012 National Winner for the Best SET-UP Adopter awarded by the Department of Science and Technology (DOST), the 2008 National Gawad Saka Winner for Outstanding Agr. Entrepreneur given by the DA and the 2007 Top 50 Men/Women of Science awarded by DOST.

¹⁵ Data on coral cover: Analysis of Coastal Marine Resources: A Contribution to the Philippine Country Environmental Analysis, 2008; Gomez (1990) Coral reef ecosystems and resources of the Philippines; Philippine Fisheries Profile 1977, 1988 and 2011; Data on mangrove cover: DENR Statistics, 1998; Data on swamp/land cover: Philippine Fisheries Profile 1977, 1988 and 2011.

¹⁶ Average world's rice exports (34.23 million metric tons) less world imports less Philippines (31.43 million metric tons). Source: Bordey, F. H. (December 2015) "Is the Philippines Ready to Compete?" Presented during the Third Research Seminar of the Benchmarking the Philippine Rice Economy Relative to Major Rice-producing Countries in Asia.

¹⁷ Read more at Oryza.com: <http://oryza.com/22669/malaysia-targets-100-rice-self-sufficiency-2020-says-agriculture-minister>

¹⁸ Aquino, A. P., An, P. A. B. and Festejo, M. A. (2013). An Overview of Policies and Public Sector Investments in Philippine Agriculture. Retrieved from http://ap.iftc.agnet.org/ap_dlb.php?id=65

¹⁹ Excludes automatic appropriations; includes budget of DA, attached agencies and corporations, including the four agencies transferred to the Office of the President in May 2014.

Directory

As of March 2016

SECRETARY

PROCESO J. ALCALA

920-39-86

920-43-69

UNDERSECRETARIES

EMERSON U. PALAD

for Operations (Crops) and Agribusiness
Marketing

929-81-86 / 920-40-79

SEGFREDO R. SERRANO

for Policy and Planning
928-05-90 / 920-40-84

JOSE C. REAÑO

for Operations (Livestock)
441-45-29 / 294-64-53

ASIS G. PEREZ

designate for Fisheries
929-95-97

ALLAN Q. UMALI

OIC for Administration and Finance
926-84-44
920-40-85

BERNADETTE FATIMA ROMULO-PUYAT

for Special Concerns
332-22-57 / 927-74-16

DENNIS M. GUERRERO

designate and Chief of Staff
920-22-23

ASSISTANT SECRETARIES

EDILBERTO M. DE LUNA

for Field Operations

929-72-67 / 426-06-49

EMMANUEL RUBEN T. MALTO

for Administration

927-34-05 / 929-73-49

MINDA S. MANANTAN

OIC for Regulations
920-17-72

OPHELIA P. AGAWIN

for Finance

920-22-30 / 920-40-03

DAVINIO P. CATBAGAN

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